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Tongass National Forest

R10-MB-430

June 2001

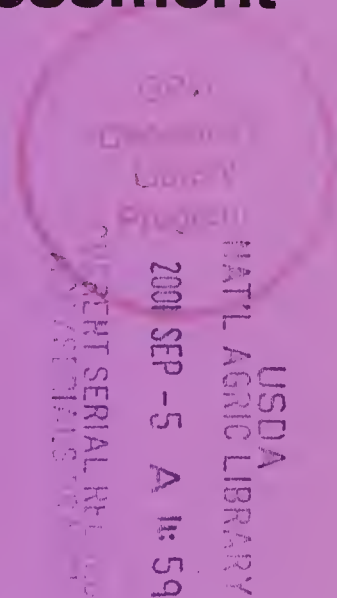


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# Hoonah Ranger District Access and Travel Management Plan

## Environmental Assessment





# **Hoonah Ranger District Access and Travel Management Plan Environmental Assessment**



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# Chapter 1

## Purpose and Need

### Introduction

The Forest Service prepared this environmental assessment (EA) to evaluate the management of the road system on the Hoonah Ranger District (Fig. 1-1) of the Tongass National Forest. The Forest Service periodically reviews road management decisions made in previous NEPA documents. Public comments, resource concerns, and present and anticipated access needs are considered during this review. The Tongass Land and Resource Management Plan (Forest Plan) identifies the parameters of motorized access and resource conditions.

This EA is not associated with the nationwide Roadless Area Conservation Project. No roads are proposed for construction within inventoried roadless areas delineated in the Forest Plan (TLMP FEIS, "Roadless Inventory" map, 1997). Classified roads proposed for closure in this analysis would be managed so they could be reopened to meet future needs. No new roadless area would result from this EA.

The EA is consistent with the Road Management Policy (January 12, 2001).

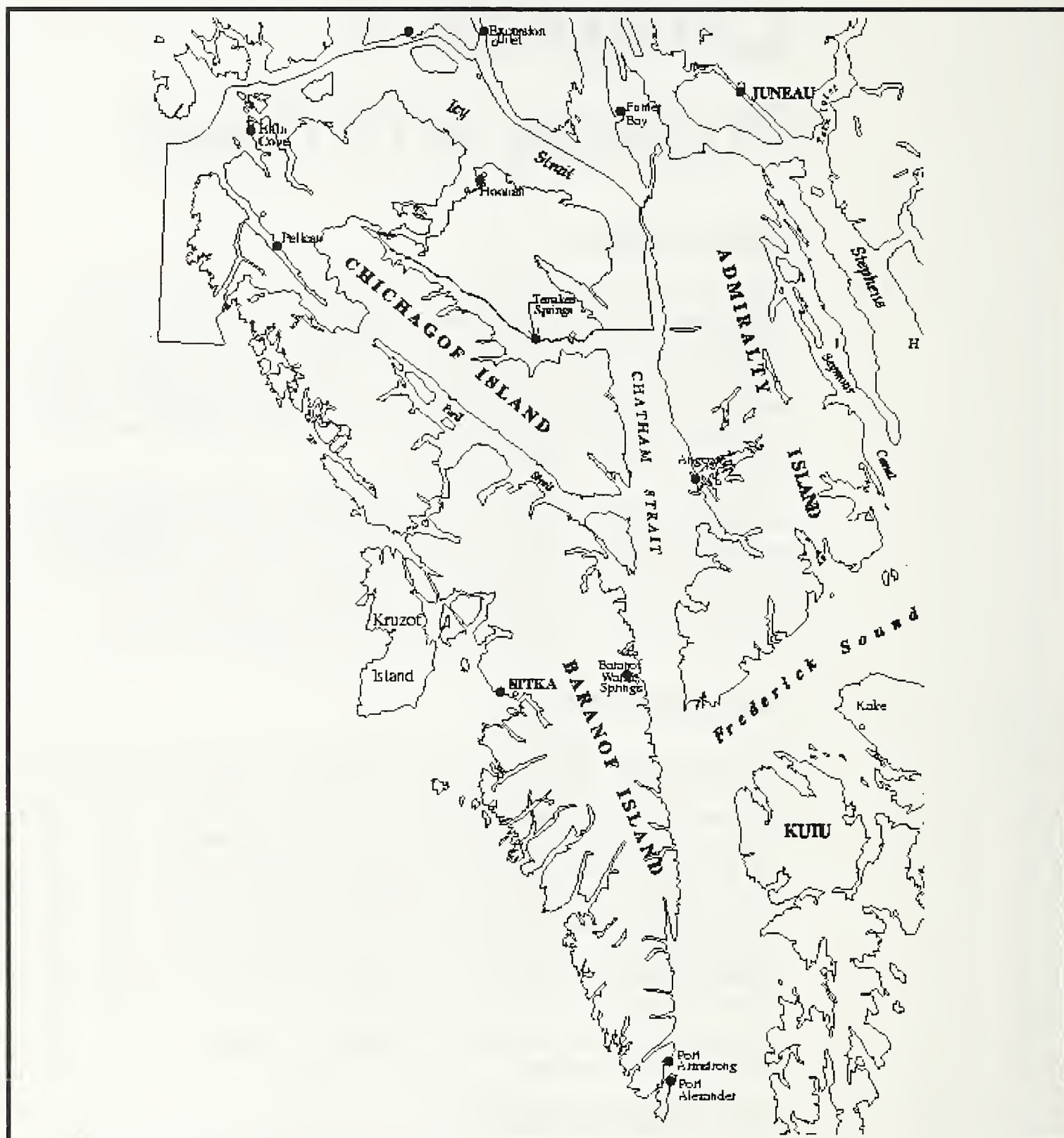
### Proposed Action


The Hoonah District Ranger proposes an Access and Travel Management (ATM) plan in which all main (arterial) roads would remain open and maintained for passenger vehicle use. Several changes to previous road closure decisions are proposed. With some minor exceptions, the Game Creek and Iyouktug road systems would be open (Fig. 1-2). The Suntaheen Road 8533 and Freshwater Bay Roads 8514 and 8518 would be opened for public traffic. This proposal closes the Seal Creek and Salt Lake Bay/Portage road systems. Forest Road 8530, past the patented Gypsum Creek mining claim, would be closed and Neka Road 8582 would be closed following the next timber sale (approximately 2006). A more detailed description of the proposed action is found in Chapter 2.

A framework to evaluate and maintain the minimal road system required for forest management is also proposed.

### Purpose and Need

The Hoonah Ranger District road system is essential for forest use, and provides access for recreation, subsistence, and commodity uses. The road system needs to provide access that best serves the current and anticipated land management objectives and public uses. It also needs to be managed within current and expected funding levels, and to promote environmental protection and values.



 Project Area


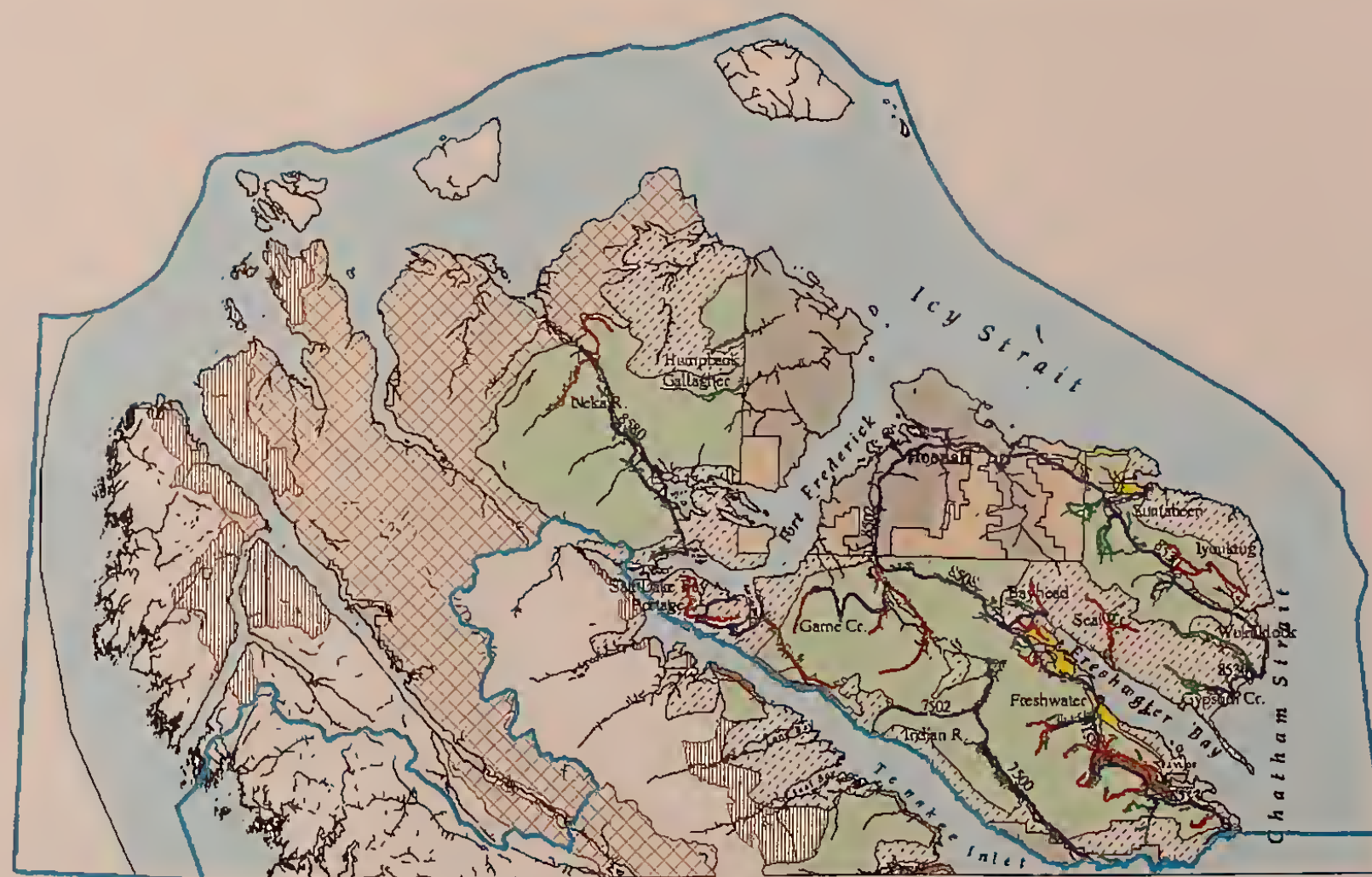
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 Scale in Miles



Figure 1-1  
 Vicinity Map For  
 Hoonah Ranger District  
 Access and Travel Management



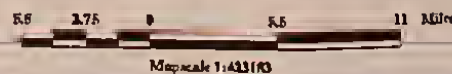


- Project Boundary
- Class I Streams
- Maintenance Level 1—Motor Vehicles Discouraged or Prohibited
- Maintenance Level 2—Open to High Clearance Vehicles
- Maintenance Level 3—Open to Passenger Cars
- Seasonal Closure August 1 thru April 30th
- Non-National Forest Lands
- Encumbered Lands
- LUD II
- Semi-Remote Recreation
- Old Growth Reserve
- Scenic Viewshed
- Modified Landscape
- Timber Production



# Hoonah Ranger District Access and Travel Management Plan Environmental Assessment

Figure 1-2:  
Hoonah Road System





The modified 1997 Tongass Land and Resource Management Plan places a high priority on developing road management objectives and access and travel management (ATM) plans for all Ranger Districts on the Tongass National Forest (TLMP, 1997; Appendix L). Some land use designations (LUD's) were changed from Timber Production to Old-Growth Habitat during the Forest Plan revision, and existing road systems in these LUD's may no longer be necessary to meet the management goals.

The purpose and need for this project is to:

- Provide sustainable, efficient, and safe access to National Forest System land within the Hoonah Ranger District for administration, resource protection, subsistence, recreation, and commercial uses.
- Provide adequate and reasonable access to State and private land, valid mining claims and other valid occupancies.
- Identify a road management strategy achievable within the land capabilities and expected road maintenance budgets.
- Provide a consistent framework on which to base road management decisions in response to changing resource conditions and needs.
- Reduce negative road effects on stream channel stability, water quality, and brown bear and fish habitat.

An ATM plan is needed to support the goals and objectives of the road maintenance, watershed, fisheries, wildlife, timber, and recreation programs on the Hoonah Ranger District. The analysis process identifies the minimal road system required for forest management. Classified roads that are not needed for resource management in the short-term would be closed by gates or placed in storage. Roads placed in storage would have drainage structures removed and water bars installed. Unclassified roads and classified roads not needed for long-term management would be decommissioned. Decommissioned roads would have the drainage structures removed and road surfaces scarified and revegetated. This analysis reviews the Hoonah Ranger District road system and assesses reasonable motorized access from which non-motorized access can proceed.

## Project Area Description

The project area is the Hoonah Ranger District on the north end of Chichagof Island. It extends from Icy Strait to Tenakee Inlet, and from the Gulf of Alaska to Chatham Strait. LUD's in the project area include Old-Growth Habitat, Timber Production, Modified Landscape, Scenic Viewshed, Semi-remote Recreation, LUD II, and Wilderness (Fig. 1-2). No roads exist in the Semi-remote Recreation, LUD II, or Wilderness LUD's. New road construction is allowed in these LUD's if they meet specific criteria (TLMP, 1997; pages 3-20, 3-88, 3-95). The Forest Service would analyze proposals to construct roads in these areas if they meet the criteria outlined in the Forest Plan. The focus of this analysis is on the roaded portion of northeast Chichagof Island. The Forest Plan has specific goals and standards and guidelines that address road system management in the context of each LUD.

The main Hoonah road system is shaped like a horseshoe. The south leg accesses the south side of Freshwater Bay and continues to East Point, overlooking Chatham Strait. The north leg crosses Suintaheen Creek, then follows Iyoutkut drainage to Chatham



# 1 Purpose and Need

## Other Planning Efforts

Strait and over to Gypsum Creek on the north side of Freshwater Bay. Four smaller road systems are not connected to this main system. One system accesses Seal Creek watershed from the north side of Freshwater Bay. Another system extends to the Tenakee Portage area from Salt Lake Bay. The third system accesses the area west of Neka Bay toward Mud Bay from Eight Fathom in Port Fredrick, and the fourth system is accessed from Sealaska Corporation land on the west side of Port Fredrick.

The Indian River road system, 7500 and 7502, is currently being analyzed as part of the Indian River EIS. This analysis will provide more site-specific information about the development of this road system. In addition, other planning processes such as Otter Lake and Iyouktug will analyze the type of road system needed to access currently undeveloped areas or if the current road system needs to be extended. The Otter Lake EIS will evaluate the area between Neka River and Humpback Creek and the Iyouktug EIS will evaluate the Iyouktug Creek watershed.

## Decision Framework

The Hoonah District Ranger will decide how the road system on the Hoonah District will be managed, including the appropriate level of maintenance and roads no longer needed for long-term management. Resource conditions and access to support local subsistence, recreation, and commercial needs will drive the District Ranger's decision. This decision may change previous road management decisions (USDA Forest Service, 1989 and 1996). Forest Order No. 10-03-20-02, January 6, 1992, signed by the Forest Supervisor, closed a number of roads on the Hoonah Ranger District. Changes to the Forest Order will be recommended to the Forest Supervisor as identified in the District Ranger's decision. The final ATM plan will be subject to periodic review and amendments to meet the changing needs of the people and resources.

The road files will be updated and signed by the District Ranger to reflect changes made to the road management objectives by the decision. The road files are maintained at the Hoonah Ranger District and an example of road management objectives and a road card are displayed in Appendix A. The Forest road database would also be updated to reflect changes resulting from this decision.

## Public Involvement

The Hoonah Access and Travel Management Plan Environmental Assessment was first listed on the 1997 Schedule of Proposed Actions. Public scoping was initiated with an interagency meeting and a public meeting held April 14, 1999. The purpose of these meetings was to develop an initial road management proposal that would:

- respond to anticipated road maintenance budget reductions,
- alleviate road related resource problems, and
- provide access to meet subsistence, commercial, and recreation needs.

Representatives from the Forest Service, Habitat Division of the Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, and the Hoonah Indian Association attended the interagency meeting. Approximately 30 people attended the evening public meeting. The Hoonah Indian Association also held a

public workshop to get comments from their constituents. Nine people attended and their comments were passed on to the Forest Service. The Hoonah District Ranger described the project to the Unit 4 Brown Bear Management Team and the Hoonah City Council.

Public involvement efforts produced approximately 30 responses from individuals and groups. Responses were on the subjects listed below:

- specific roads used for hunting, fishing, gathering forest products, and other subsistence activities,
- support for closing remote road systems not connected to the main Hoonah road system, and
- road-associated impacts on brown bear habitat and watershed resources.

These comments and those of the governmental agencies were used to develop the proposed action. The 30-day scoping period was initiated on March 10, 2000 when the proposed action was published in the Juneau Empire. The proposed action was mailed to a total of 45 individuals or organizations who had expressed interest in this type of action or had participated in the earlier public involvement process. The purpose of this 30-day scoping period was to identify any additional conflicts or unresolved issues with the proposed action. The scoping period ended April 10, 2000, with five people or organizations responding. The comments centered on brown bear habitat, management of roads in Old-Growth Habitat LUD's, and maintaining deer hunting opportunities. Recreation opportunities and soil stability and water quality concerns were also expressed. The comments were consolidated into the key issues of the analysis. The main areas of disagreement were the Game Creek and Salt Lake Bay/Portage road systems, and whether to open Road 8533 in Sultaheen Creek and Bayhead Road 85092. These areas of disagreement were used to develop the alternatives to the proposed action.

## Issues

The key issues in this analysis were identified through public scoping of the proposed action. The five issues below were unresolved by the proposed action, Forest Plan allocations, standards and guidelines, or mitigation measures. These key issues drive the development of alternatives to the proposed action.

### Brown Bear Habitat

The project area has a relatively small and geographically isolated population of brown bear that are more vulnerable to population decline than a larger population. All major watersheds in the project area contain roads, and several salmon streams have roads adjacent to them. Motorized access can influence how bears use their habitat. Roads that access important feeding sites, riparian areas, and beach meadows negatively affect important brown bear habitat and increase the risk of Defense of Life and Property (DLP) mortality. Roads that access areas important to local residents or that allow bear viewing could be left open.

While many roads are proposed for closure in the proposed action, some participants believed more closures were necessary to protect important bear habitat. They suggested roads should be considered for closing if they:

- Are within Old-Growth Habitat LUD's;



- Access important bear feeding and denning sites;
- Occupy the travel corridor between NE Chichagof and the rest of the island;
- Are not connected to the main road system; or
- Are not important to local residents.

Examples include the Salt Lake Bay/Portage, Game Creek, and Seal Creek road systems.

*Measurement:* The miles of open road adjacent to brown bear feeding habitat would indicate the influence of roads on brown bear habitat use and assess the risk of DLP mortality.

### **Soil Stability and Water Quality**

Inadequately maintained roads or those built on unstable soils are more likely to have erosion and landslide problems than properly maintained roads or those built on stable soils. Erosion and landslides can contribute large quantities of sediment to streams, which can degrade stream function and riparian, wetland and fish habitat. Unstable road segments require continual and often expensive maintenance.

When not adequately maintained, culverts and other stream crossing structures may fill with sediment and/or wash out during high flows. This situation creates long-term resource damage to stream channels and fish habitat. Most of the culverts and bridges need to be removed and an adequate number of waterbars installed on closed roads to prevent long-term sediment and erosion problems. Examples of additional roads that would be closed include the end of Road 8534 in the Iyouktug drainage, Road 85093 beyond the junction of 85091 in Bayhead, and Road 85765 in Game Creek.

*Measurement:* The miles of road on high hazard soil areas and the number of bridges and culverts at sensitive stream crossings would indicate the relative influence of roads on stream sedimentation potential. Sensitive stream crossing sites are those that carry a high bed-load, have flows that cause channels to shift, or are on streams with a high mass movement potential.

### **Old-Growth Habitat Integrity**

Old-Growth Habitat LUD's identified in the Forest Plan were designed to provide wildlife refuge areas and protect old-growth dependent species, including brown bears. Roads can decrease wildlife habitat quality and some participants believed that all roads should be closed in Old-Growth Habitat LUD's when not needed to access other resources (TLMP, 1997; pages 3-81, 4-114).

*Measurement:* The miles of open road in Old-Growth Habitat LUD's would indicate the relative influence of roads between the alternatives.

### **Motorized Access for Subsistence**

Hoonah residents rely on the local road system to meet subsistence needs. Participants believed that some roads proposed for closure should be left open to motorized access across the forest and to areas important for subsistence use. Upper Game Creek, Salt Lake Bay/Portage area, Bayhead and Iyouktug have been identified by some Hoonah residents as important areas to hunt and gather forest products for subsistence purposes. Southeast Senior Services take the community elders up to Game Creek to fish and pick berries.

*Measurement:* The miles of open road and proximity to Hoonah would indicate the nearest subsistence opportunities for Hoonah residents.



## Motorized Access for Recreation

Hoonah residents and visitors rely on the local road system for recreation. Driving for pleasure, wildlife viewing, camping, hiking, hunting and fishing are important activities that contribute to the local economy and standard of living in the community. Some participants believed the existing roads should be left open, especially the roads connected to Hoonah, where practical.

*Measurement:* The miles of open road and proximity to Hoonah would indicate the nearest motorized recreation opportunities for Hoonah residents.

## Comments Outside Scope of Analysis

The following comments were considered but determined not to represent significant issues as defined by the National Environmental Policy Act (NEPA). Some of these concerns have been addressed through other administrative processes, during preparation of the Forest Plan, or their resolution is beyond the scope of this project. These comments may be addressed to varying degrees within this analysis, but they did not drive the development of alternatives to the proposed action.

**Comment:** Keep all the existing roads open and do not build any more new roads.

**Forest Service response:** Some of the existing, unclassified roads on the Hoonah Ranger District are not needed in the long-term for resource management. The Forest Service road management policy directs that these types of roads be decommissioned. Classified roads needed for long-term resource management but not at the present, would be placed in storage until they are needed, to reduce maintenance costs and protect resource integrity. The extension of classified roads or development of new roads is not analyzed in this document but may be part of future project-level analyses.

**Comment:** The Forest Service should conduct an interagency review of the Old-Growth Habitat LUD's because those designated seem to be compromised by roads and timber harvest of the bottomlands. Some other strategy may be needed or more area designated as Old-Growth Habitat to meet wildlife requirements.

**Forest Service response:** Land use allocations were made through interdisciplinary and interagency processes in the Forest Plan. This project implements Forest Plan decisions and may close road systems to address Old-Growth Habitat requirements. The scope of this analysis does not preclude or otherwise influence the locations of Old-Growth Habitat LUD's.

**Comment:** Identify opportunities for bear viewing areas and decide which of these should be managed for viewing opportunities.

**Forest Service response:** Though we do not preclude bear viewing opportunities, the required analysis to identify and implement bear viewing sites is outside the scope of this analysis.

**Comment:** Actively assist Alaska Department of Fish and Game, through funding and other means, in monitoring the NE Chichagof bear population.

**Forest Service response:** The Forest Service, in cooperation with the Alaska Department of Fish and Game, is developing a brown bear monitoring plan for the Tongass National Forest, including the project area. Establishing rules and regulations for the taking of game is the function of the Alaska Department of Fish and Game.

### **Federal and State Permits, Licenses, and Certifications**

#### **State of Alaska, Division of Governmental Coordination**

The Alaska Division of Governmental Coordination (ADGC) coordinates State agency review of the Forest Service determination of project consistency with the Alaska Coastal Zone Management Plan and other State standards. Federal lands are not included in the definition of the coastal zone as prescribed in the CZMA. However, the act requires that when Federal agencies conduct activities or developments that affect the coastal zone, the activities or development be consistent to the maximum extent practicable with the approved State Coastal Management Program. The Forest Service makes this determination.

#### **Coastal Zone Management Act**

This project falls under the category of "Forest Service Activities That Do Not Normally Require a Consistency Determination" (MOU Sec. 202C). No new roads are planned for construction. Most of the newly planned road closures are outside of the coastal zone and would have no direct impact. Removal of culverts and bridges on these roads may temporarily increase turbidity in the affected stream but the sediment would settle before reaching the coast. This project has been categorized as "FAA (3) – FS does not expect to provide a consistency determination or a negative determination" on the Schedule of NEPA Proposed Actions since 1997.

#### **State Historic Preservation Officer**

Consultation with the State Historic Preservation Officer is pending on this project to fulfill requirements of Section 106 of the National Historic Preservation Act. The Forest Service archeologist determined through a review of the literature and previous monitoring efforts that an additional survey was not needed.

### **Applicable Laws and Executive Orders**

**National Historic Preservation Act of 1966 (as amended)**

**National Environmental Policy Act (NEPA) of 1969 (as amended)**

**Endangered Species Act (ESA) of 1973 (as amended)**

**Bald Eagle Protection Act**

**Clean Water Act of 1977 (as amended)**

**Archeological Resource Protection Act of 1980**

**Magnuson-Stevens Fishery Conservation and Management Act of 1996**

**Executive Order 11988 (floodplains)**

**Executive Order 11990 (wetlands)**

**Executive Order 12898 (environmental justice)**

**Executive Order 12962 (aquatic systems and recreational fisheries)**

## Planning Record

The project planning record, located at the Hoonah Ranger District, contains more detailed resource analyses. Other reference documents such as the Tongass Forest Plan, the Tongass Timber Reform Act, and the Alaska Regional Guide are available at public libraries throughout Southeast Alaska as well as the Forest Supervisor's Office in Sitka, Alaska. The Forest Plan is also available on the Internet (Tongass National Forest Web site) and CD-ROM.

# 1 Purpose and Need



# Chapter 2

## Alternatives

### Introduction

This chapter summarizes the development of alternatives for the project. Four alternatives are discussed in detail. Current management direction is described in Alternative 1 (No Action). Alternative 2 (Proposed Action) describes the consensus achieved in the preliminary interagency and public involvement process. Alternatives 3 and 4 address issues related to the Proposed Action.

### Alternatives Considered But Eliminated From Detailed Analysis

Two alternatives were considered but eliminated from detailed analysis. They were:

- 1) Leave all existing roads open;
- 2) Manage all roads at current maintenance levels.

Neither of these alternatives would meet the Purpose and Need for the Proposed Action (Chapter 1, page 1-4). In addition, the cost of maintaining the existing open roads at current maintenance levels is higher than projected future budgets. This cost does not include maintenance of currently closed roads that still have bridges and culverts in place. Without adequate maintenance, unacceptable resource damage would occur.

### Actions Common to All Alternatives

The public involvement process (Chapter 1) identified areas of agreement on the management of the Hoonah road system as well as areas of dispute. Discussions of road management designations fell into the following categories:

- Road management designations that remain the same in all the alternatives;
- Road management designations that change from the existing management designation, Alternative 1;
- Road management designations that vary between alternatives.

Participants in the public involvement process supported leaving open the arterial roads (Roads 8508, 8530, 8578, and 8580), most of the Freshwater Bay road system, and Road 8544 in the Neka River area. These roads are well engineered and have few environmental concerns. They provide general access for subsistence, recreation, and

## 2 Alternatives

resource development. The participants in this early process also supported keeping closed and placing in storage:

- The Wukuklook drainage road system,
- Road 85331 in Suntaheen Creek,
- Road 85290 in Gypsum Creek,
- Road 86101 in Seal Creek,
- Road 85091 in the Bayhead area,
- Roads 8541 and 8546 in the Humpback-Gallagher Creek area,
- Road 85792 in the Salt Lake Bay/Portage area.

These roads were not identified as important for subsistence or recreation use, nor needed for timber stand improvement treatments. Unclassified roads would be decommissioned.

Some road management designations for access and maintenance levels would be changed from the existing situation. They are not controversial changes and are therefore the same in each alternative, except Alternative 1 (No Action). Road 85341 in Iyouktug would be open. Seal Creek road 8610, road 8530 beyond private land (Gypsum mine) and the last mile of roads 8511 and 85191 south of Freshwater Bay would be closed. Freshwater Bay Road 8514 was closed by Forest Supervisor order. It accesses the same vicinity as road 8512, which crosses a wetland and is overgrown by brush. Road 8514 accesses more scenic vistas and higher elevations than road 8512. Road management designations would be changed to close road 8512 and open road 8514.

Consensus was not reached on the road systems in the Game Creek and Salt Lake Bay/Portage areas, and individual roads in the Bayhead and Suntaheen Creek areas. These differences are portrayed in the range of alternatives, which are described in the following section.

The following criteria would be used to evaluate roads not specifically mentioned above or in the alternative descriptions.

1. Close all roads in Old-Growth Habitat LUD's unless they access high value subsistence areas, recreation destinations, or private land (Forest Plan 3-76, 3-81). The minimum road length and maintenance would be applied for these exceptions.
2. Roads in development LUD's (Timber Production, Modified Landscape, Semi-remote Recreation, and Scenic Viewshed) would be left open if they could access future resource management opportunities by extending the system from them, or if they have moderate to high subsistence or recreational values. Maintenance would be appropriate to the traffic level. Roads without the above values, with high maintenance costs, or that contribute to resource damage would be placed in storage (Forest Plan, pages 3-134, 3-143, 3-150).

Under all action alternatives, roads closed in Old-Growth Habitat LUD's or areas with high resource concerns would be made impassable to passenger vehicles. Bridges, culverts, and other stream crossing structures would be removed. Low water crossings would replace these structures, where possible, in development LUD's to facilitate



ATV, bicycle, and hiking access. Most stream crossings would be passable to foot traffic in the Old-Growth Habitat LUD's. Removing stream-crossing structures on closed roads eliminates the cost of their maintenance and the risk of resource damage when they are not maintained.

## Alternatives Considered in Detail

### Alternative 1 – No Action

The Hoonah road system would be managed as designated by Forest Supervisor order (No. 10-03-20-02) and previous timber sale decisions (USDA Forest Service, 1989 and 1996). The Iyouktug road system would be gated to protect deer habitat and maintain the population for subsistence hunting (USDA Forest Service, 1989). The Game Creek road system would be gated and closed to public vehicles to decrease motorized vehicle use through deer habitat, protect important bear feeding areas, and reduce potentially negative bear/people interactions. This alternative addresses wildlife and subsistence issues by closing roads in the Game Creek and Iyouktug areas, and soil and water quality issues in Freshwater Bay, Suntaheen, and Wukuklook areas.

The Salt Lake Bay/Portage roads would be open, except as mentioned in Actions Common To All Alternatives. In Iyouktug, road 8534 would be closed between August 1 and April 1. Bayhead area roads 8509 and 85093 would be open, but 85092 would be closed. Suntaheen Creek road 8533 would be closed, as would roads 8515 and 8514 south of Freshwater Bay. Freshwater Bay roads 8513 and 8518, and Neka area roads 8582 and 85811 would be open. Road maintenance levels are displayed in Fig. 2-1, and a comparison to the proposed action is shown in Table 2-1.

### Alternative 2 – Proposed Action

This alternative represents the consensus that was developed through the preliminary interagency and public involvement effort (Chapter 1). It allows motorized access to high use subsistence and recreation areas, protects quality brown bear habitat, reduces the potential for road-related sedimentation, eliminates fish passage barriers, and reduces road density in Old-Growth Habitat LUD's.

The Game Creek road system would be open, except for the upper ends of roads 8504 and 85761, because of the high subsistence values and its proximity to Hoonah. The Salt Lake Bay/Portage area road system would be closed because it is in an Old-Growth Habitat LUD and not connected to the main Hoonah road system. In the Iyouktug Creek watershed, road 8534 would be open. Bayhead area roads would be managed as in Alternative 1, except roads 8509 and 85093 would be open for high-clearance vehicle use.

Suntaheen Creek road 8533 would be open, as would roads 8514, 8515, and 8518 south of Freshwater Bay. The last mile of road 8518 would be closed. Neka area roads would be managed as in Alternative 1 except road 8582 would be closed following the next timber sale (about 2006). Road maintenance levels are displayed in Fig. 2-2, and a comparison of the alternatives is shown in Table 2-1.

## 2 Alternatives

Table 2-1\*: Road Management Alternatives to the Proposed Action, Hoonah Ranger District.

Road Number	Alternative			
	1 - No Action	2 - Proposed Action	3	4
<b>Game Creek</b>				
8502	closed	open	open	open
8504	closed	open; except last 2.5mi	closed	open; except last 2.5mi
8576	closed	open	closed	open
85761	closed	open; except last 1 mi	closed	open; except last 1 mi
85765	closed	open	closed	open
<b>Salt Lake Bay/Portage</b>				
8579	open	closed past 85791	closed past 85791	open, except last 2.3mi
85794	open	closed	closed	open, except last 1 mi
<b>Neka Cr. - 8-Fathom</b>				
8582	open	open	closed	open
85811	open	open	closed	open
<b>Bayhead</b>				
8509	open	open	closed	open
85092	closed, Forest Order	closed	closed	open
85093	open	open	closed	open
<b>Iyouktug Creek</b>				
8534	closed Aug. 1- Apr. 1	open except last 3mi	open except last 3mi	open except last 3mi
85341	closed Aug. 1- Apr. 1	open	open	open
<b>Suntaheen Creek</b>				
8533	closed, Forest Order	open	closed	open
<b>Freshwater Bay</b>				
8513	open	open except last 1.5mi	open except last 1.5mi	open
8515	closed	open	closed	open
8518	open	open except last 1 mi	closed	open except last 1 mi

\*Only roads that are managed differently between alternatives are displayed. See Appendix B for the display of all roads on Hoonah Ranger District.

### Alternative 3:

Under this alternative, the Hoonah road system would be managed to reduce negative brown bear/human encounters. The emphasis would be to reduce road-associated disturbance in important brown bear feeding areas. This alternative is also designed to improve the integrity of Old-Growth Habitat LUD's by closing most of the roads in Old-Growth Habitat except those needed to access private land.

Alternative 3 is similar to Alternative 2 (Proposed Action) except for the following:

- The Game Creek road systems would be closed except for road 8502. The intent of leaving road 8502 open is to provide some subsistence access near Hoonah but reduce the potential for negative bear/people encounters in the better bear habitat.



- The last 3 miles of Road 8534 in the Iyouktug drainage would be closed.
- All of the Bayhead area roads, road 8533 in Suntaheen Creek, and roads 8515 and 8518 south of Freshwater Bay would be closed. Closing the Bayhead road 85093 beyond the intersection of road 85091 addresses concerns regarding a relatively unstable road section immediately uphill of a fish stream. The last 1.5 miles of road 8513 would be closed.
- Neka River roads 8582 and 85811 would also be closed.

Road maintenance levels are displayed in Fig. 2-3, and a comparison to the proposed action is shown in Table 2-1.

## **Alternative 4:**

The Hoonah road system would be managed to maximize passenger vehicle access. Emphasis is given to motorized access for subsistence and recreation uses while meeting Forest Plan standards for resource conditions.

Alternative 4 is identical to Alternative 2 (Proposed Action) except for the following:

- Salt Lake Bay/Portage area roads 8579 and 85794 would be open and roads 85792 and 85793 would be closed.
- Iyouktug road 8534 would be managed as in Alternative 3.
- Road 85092 in the Bayhead area would also be open.
- Neka River road 8582 would not be closed following the next timber sale.

Road maintenance levels are displayed in Fig. 2-4, and a comparison to the proposed action is shown in Table 2-1.

## **Alternative Comparison**

The relative impacts of each alternative on significant issues and resources are shown in Table 2-2, Alternative Comparison.

# **Mitigation and Monitoring**

Road closures under any alternative would not be implemented within a single year. Logistics and budgets would likely require several years to fully implement the decision. The road closure schedule would be based on the roads' potential for failure and the resources at risk. For example, a road adjacent to an anadromous fish stream with a high potential for failure would be scheduled for closure first. Roads beyond these high-risk roads would be closed at the same time since they would be difficult to access once the high-risk road was closed.

## **Annual Bridge and Culvert Inspections**

In all alternatives except Alternative 3, road 85093 would require inspections every two years. This section of road would be treated to stop current erosion problems and reduce landslide potential. Road 85093 will be closed if monitoring reveals these treatments are not effective or maintenance costs are excessive. Under Alternative 3, this road would be closed with the stream crossing structures removed and the roadbed

## 2 Alternatives

stabilized. Annual inspections would be made on the last 2.5 miles of road 8534 under Alternatives 1 and 2. Again, this section of road would be closed under Alternatives 3 and 4. Annual inspections would examine the stream crossings to assure that culverts are clear of debris and securely placed and that bridges are structurally sound. Roadbeds would also be inspected for signs of instability.

### **Brown Bear Defense of Life and Property (DLP) Mortality**

Roads may be closed in areas where DLP mortality is a consistent cause of brown bear deaths and motorized access is determined to be the source of the problem. Annual DLP mortality in the same area is indicative of unacceptable human-bear conflicts. Under all alternatives, the distribution and frequency of brown bear DLP mortality will be reviewed annually using data collected by the Alaska Department of Fish and Game (ADF&G). Data will be analyzed by road segment (if near a road) within minor game harvest units to more accurately assess the principle causes and formulate solutions.

### **Karst**

Karst systems will be protected during road closures by ensuring that interrupted drainage systems are re-established or that additional water is not diverted into karst groundwater systems. Erosion and sediment transport from the road surface and cut slopes will be prevented from entering the karst system through the use of sediment traps, revegetation of cut and fill slopes, or other appropriate methods.

### **Wetland Function**

A wetlands specialist with the Corps of Engineers will be enlisted to inspect 19 road segments that cross sensitive wetlands. The purpose of the inspection would be to identify whether the road segment impairs wetland function. The level of the water table and its fluctuations, response of vegetation, and stream flow above and below the road will be measured over several seasons. Mitigation measures will be prescribed on a site-specific basis if wetland function is determined to be impaired.

Roads through beaver habitat will be inspected periodically to determine if beaver dam-building activities threaten the roadbed or fish passage structures. Larger drainage structures, bridges, or other site-specific options would be considered to maintain the beaver colony, fish passage, and the road. An area of recent beaver activity is the segment of road 8508 southeast of road 85082.

### **Fisheries**

Current efforts to identify and correct impediments to fish passage would continue. Under all alternatives, fish stream crossings would be monitored on a regular schedule as part of the Tongass National Forest road survey program, to insure structures are functioning as designed. Improvements will be made where necessary to ensure fish passage.

**Table 2-2: Comparison of Significant Issues and Resource Concerns Between Alternatives.**

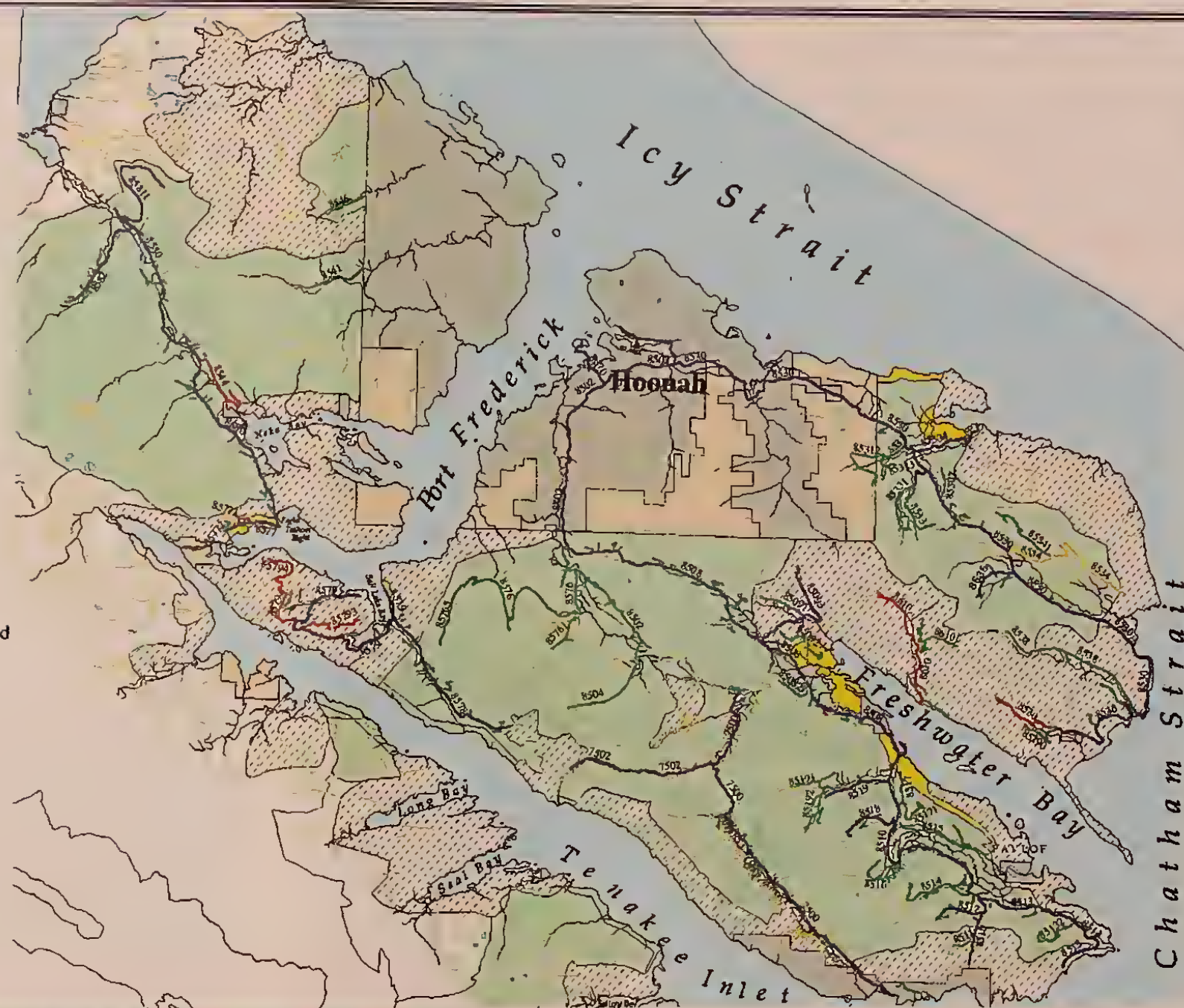
Issue	Alternative				
	Current	1	2	3	4
<b>Brown Bear Habitat</b>					
Open road adjacent to potential brown bear feeding areas (miles)	24	19	20	15	21
<b>Old-Growth Habitat Integrity</b>					
Open road in Old-Growth Habitat (miles)	45	49	25	20	33
<b>Soil and Water Quality</b>					
Open road across hazardous soils (MM2-4) (miles)	43	31	32	21	36
Open sensitive stream crossings (number)	96	66	78	55	78
<b>Motorized Access for Subsistence</b>					
Open roads (miles)	199	150	165	126	175
<b>Motorized Access for Recreation</b>					
Total open road (miles)	199	150	165	126	175
Total closed road (miles)	57	106	91	130	81
<b>Other Resource Considerations</b>					
<b>Fisheries</b>					
Open road crossings on fish streams (number)	185	139	152	119	155
<b>Wetlands</b>					
Open roads across wetlands (miles)	8	7	7	6	7
<b>Economics</b>					
Annual road maintenance (\$)	168,800	147,000	130,000	120,000	134,000
Cost of road closure	N/A	135,000	377,000	633,000	309,000
Value of retrieved bridges	N/A	0	550,000	550,000	350,000
<b>Resources</b>					
Threatened, Endangered, Sensitive species	No effect	No effect	No effect	No effect	No effect
Heritage	No effect	No effect	No effect	No effect	No effect
Karst and Cave	No effect	No effect	No effect	No effect	No effect
Floodplains	No effect	No effect	No effect	No effect	No effect
Forest Health and Productivity	No effect	No effect	No effect	No effect	No effect



# 2 Alternatives

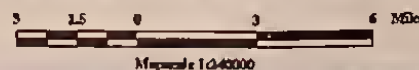


- Class 1 Streams
- Class 2 Streams
- Class 3 Streams
- Maintenance Level 1 – Motor Vehicles Discouraged or Prohibited
- Maintenance Level 2 – Open to High Clearance Vehicles
- Maintenance Level 3 – Open to Passenger Cars
- Seasonal Closure August 1 thru April 30th
- Non-National Forest Lands
- Encumbered Lands
- Timber Production or Modified Landscape
- Old Growth Reserve
- Scenic Viewshed



# Hoonah Ranger District Access and Travel Management Plan Environmental Assessment

Figure 2-1: Alternative 1  
No Action

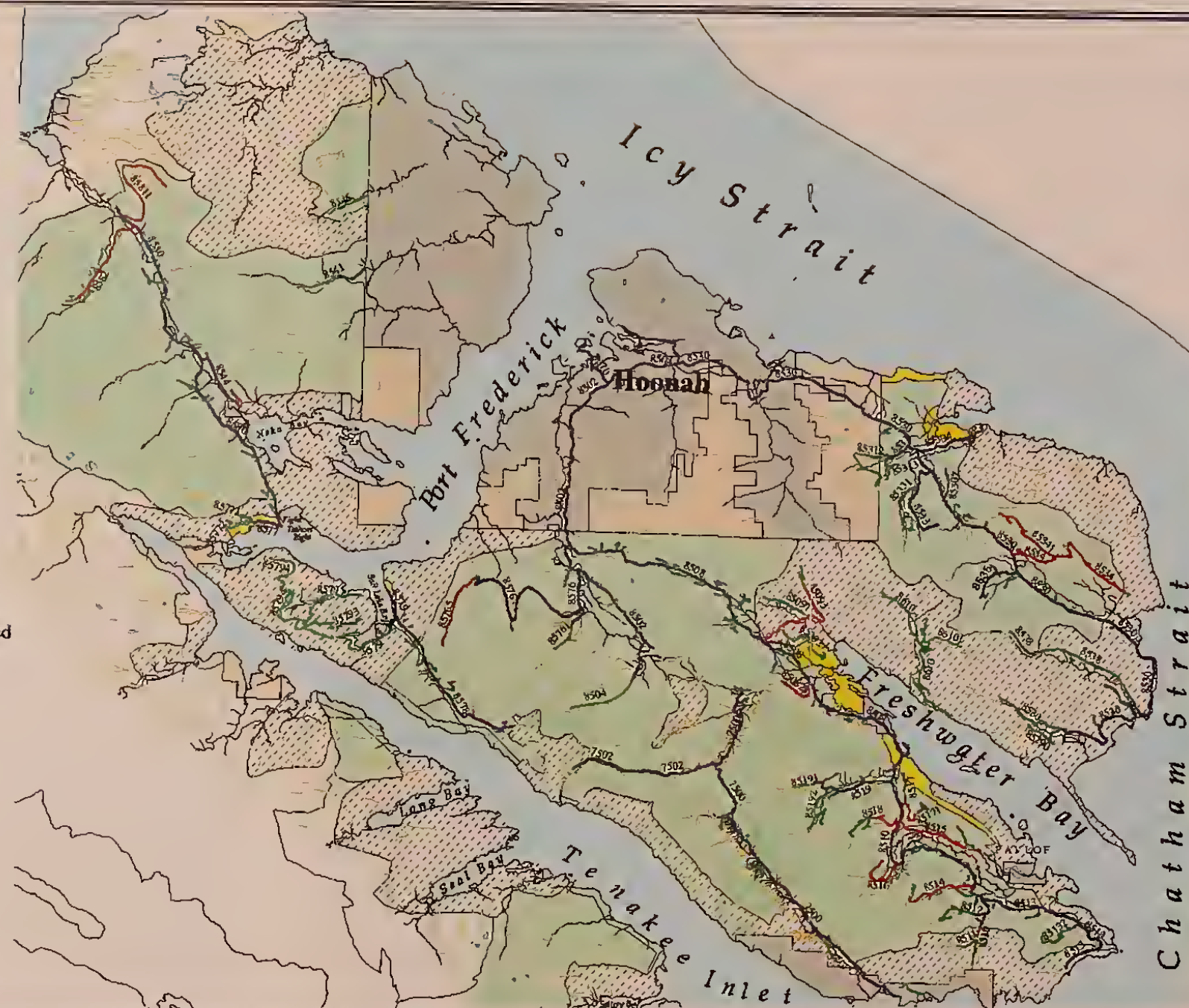








- Class 1 Streams
- Class 2 Streams
- Class 3 Streams
- Maintenance Level 1 - Motor Vehicles Discouraged or Prohibited
- Maintenance Level 2 - Open to High Clearance Vehicles
- Maintenance Level 3 - Open to Passenger Cars
- Seasonal Closure August 1 thru April 30th
- Non-National Forest Lands
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- Timber Production or Modified Landscape
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# Hoonah Ranger District Access and Travel Management Plan Environmental Assessment



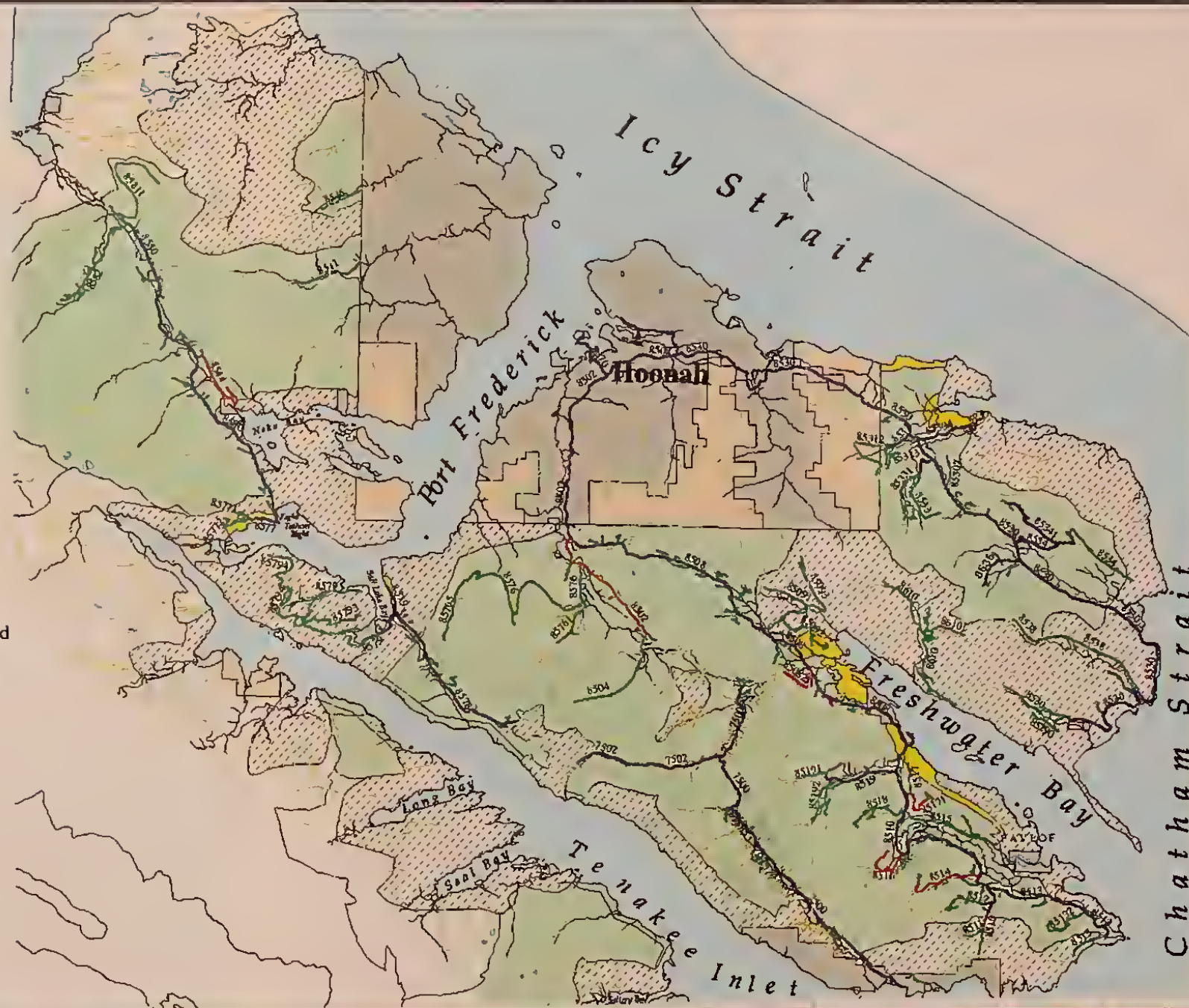
Figure 2-2: Alternative 2  
Proposed Action







- Class 1 Streams
- Class 2 Streams
- Class 3 Streams
- Maintenance Level 1 – Motor Vehicles Discouraged or Prohibited
- Maintenance Level 2 – Open to High Clearance Vehicles
- Maintenance Level 3 – Open to Passenger Cars
- Seasonal Closure August 1 thru April 30th
- Non-National Forest Lands
- Encumbered Lands
- Timber Production or Modified Landscape
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- Scenic Viewshed



# Hoonah Ranger District Access and Travel Management Plan Environmental Assessment

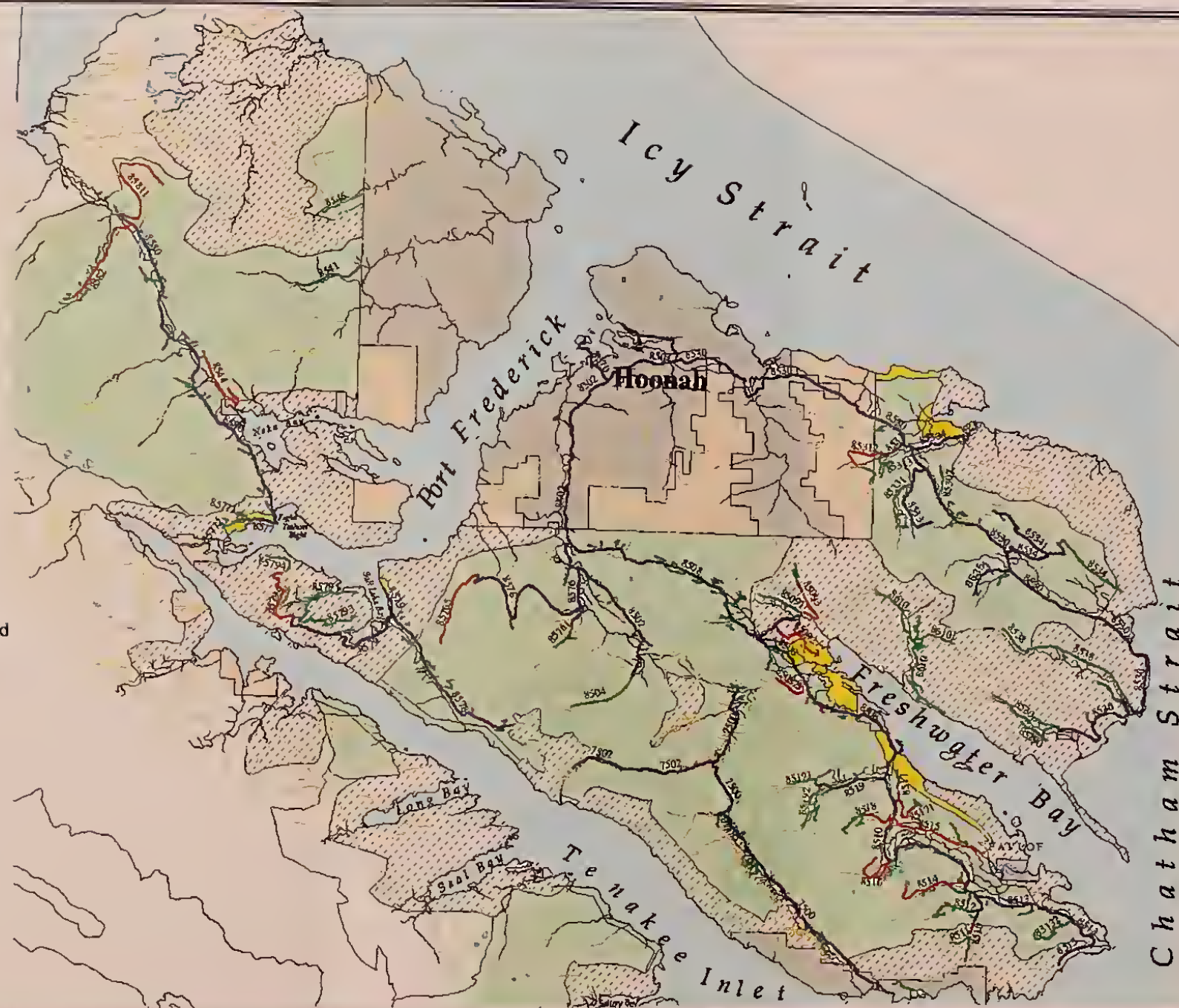
Figure 2-3: Alternative 3





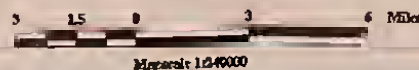


- Class 1 Streams
- Class 2 Streams
- Class 3 Streams
- Maintenance Level 1 –Motor Vehicles Discouraged or Prohibited
- Maintenance Level 2 –Open to High Clearance Vehicles
- Maintenance Level 3 –Open to Passenger Cars
- Seasonal Closure August 1 thru April 30th
- Non-National Forest Lands
- Encumbered Lands
- Timber Production or Modified Landscape
- Old Growth Reserve
- Scenic Viewshed



Hoonah Ranger District  
Access and Travel Management Plan Environmental Assessment

Figure 2-4: Alternative 4







# Chapter 3

## Affected Environment

### Hoonah Road System

Five unconnected road systems comprise the land transportation system in the project area. Four of the systems are isolated and accessed only from saltwater (Fig. 1-2), as follows:

1. The Seal Creek system is located on the north side of Freshwater Bay.
2. The Salt Lake Bay/Portage area system is located at the southeast head of Port Fredrick.
3. The Eight Fathom Bight system is located west of Neka Bay and accessed from the southwest head of Port Fredrick.
4. The fourth system is a small, three-road system. It is accessed by a Sealaska Corporation road system at West Port LTF on the west side of Port Fredrick. Forest Service roads on this system will be closed following the completion of the current timber sale as directed in the Record of Decision for the Eight Fathom Timber Sale EIS.

The largest network of roads is the Hoonah road system. This system connects the City of Hoonah, Whitestone Logging camp and Mt. Bether Bible Center, and includes approximately 130 miles of National Forest System roads. The main arterial roads of the Hoonah road system are shaped like a horseshoe. The north leg of the horseshoe crosses Spasski and Suntaheen creeks, and follows Iyouktug drainage to Chatham Strait and south to Gypsum Creek on the north side of Freshwater Bay. The south leg crosses Gartina Creek, parallels Game Creek and Freshwater Creek to the south side of Freshwater Bay, and proceeds to East Point at the confluence of Tenakee Inlet and Chatham Strait (Fig. 3-1). Several collector and local roads connect to each arterial leg.

The Hoonah road system was developed primarily to access and develop the timber resource. The road system and its potential effects on the environment were analyzed through timber sale analyses. Assumptions made during the planning process were not always borne out through the project implementation phase. Some roads on the Hoonah District are prone to slope failure, interfere with fish passage, contribute sediment to streams, or interfere with brown bear habitat use. In addition to these resource concerns, resource management allocations have changed and previous Timber Production areas were re-allocated to Old-Growth Habitat. Roads in Old-Growth Habitat are managed to be consistent with the objectives of the land use designation, specifically as benefits brown bear (TLMP, 1997; page 3-81). These roads systems may be closed to meet the objectives.

## 3 Affected Environment

Another aspect of road management is the cost of maintaining roads. Road maintenance budgets have been inadequate to consistently maintain all the roads. Poorly maintained roads may cause erosion and landslides, which then interrupt stream function, and degrade riparian and wetland habitat. Closed roads continue to need maintenance as long as culverts and stream crossing structures remain in place. The Hoonah Ranger District is responsible for the maintenance of approximately 250 to 300 miles of road. About 148 miles of road are maintained for passenger vehicles and are generally arterial roads. Another 49 miles of road are maintained for high clearance vehicles. The rest of the roads have been allowed to grow closed but most stream crossing structures remain in place.

### Topography

Three major faults run through the project area to create steep, craggy mountainous terrain. Narrow valleys at the higher elevations open into broader valleys at lower elevations. Blocks of carbonate rock generally form the ridges in the project area. A karst landscape develops in the areas underlain by soluble, carbonate rocks and is typified by sinkhole and collapse channel features and well-drained soils. Probable areas for karst development in the project area include the Point Augusta, Kennel Creek Limestone, Cedar Cove, Freshwater Bay, and Iyoukeen Formations. Surface features such as deep shafts, fissures, eroded rills, and spires or spikes of limestone are indicative of karst landforms and found at elevations greater than 1,200 feet. They are generally overlain by shallow organic soils.

The climate of Southeast Alaska promotes the dissolution of carbonate rocks and increases permeability. The abundant precipitation, acidic waters that flow from peat lands, and the purity of the carbonates enhance karst development. Most of the discrete points where precipitation enters the karst groundwater systems are at higher elevations. The karst systems extend from the alpine areas to the areas where the groundwater resurfaces.

The faulting and folding of the limestone blocks creates sharp uplifts on one side of the block, and water resurfaces along the down-dip side of the blocks. Alluvial and colluvial fans have developed on the steep slopes of the fault zone. Streams draining the alpine ridges above these fans disappear at the fan's head. The fans, consisting of mainly large carbonate blocks, are well drained. The disappearing waters flow beneath the fan deposits and dissolve the carbonate materials from below. The waters emerging at the bottom of these fans are important to the fisheries they supply and the calcareous fens they irrigate. Not all waters disappear at the head of the alluvial fans or drain down to resurgences. Some resurgences exist along the uplifted side of the carbonate blocks associated with joints and fractures.

At the lower elevations, from sea level to between 1,000 and 1,200 feet, much of the epikarst was scoured off and blanketed by glacial till during the most recent glaciations. Large discrete karst features – mainly sinkholes, insurgences, and collapsed channels, are exposed where the glacial deposits have been piped into the underlying karst drainage systems. Arterial roads are generally located in the valley bottoms and lower valley side slopes and do not intersect the karst system.

The steep, broken terrain interspersed with muskegs and bogs inhibits off-road use of high-clearance or all-terrain vehicles. Removing stream-crossing structures on closed



roads would limit motorized vehicle use on some roads but hikers would generally be able to continue use of the road.

## Watershed

### Streams

Roads with a strong potential for soils-related slope failure are identified by cracks in the roadbed and steep, sloughing cut slopes. Aside from the hazardous travel conditions they present, they can have direct impacts on fish habitat by the contribution of soil and sediment to the streams. Road 85093 and the last three miles of road 8534 are both prone to landslides. Road 85093 in the Bayhead area has had several landslides that contributed soil and sediment directly to streams supporting anadromous fish populations. Beyond the intersection of road 85091, there are several unstable road segments as evidenced by the presence of cracks and steep, sloughing cut slopes.

Roads that cross alluvial fans or high-gradient, contained channels are vulnerable to stream damage. These stream types generally carry water only during high flow periods but they have the capacity to move large gravel and cobble bed-load. The bed-load movement threatens the stability of the stream crossing structures. Effects on fish habitat and productivity are generally not of concern since the streams do not carry fine sediments, and crossings are usually located away from fish-bearing streams. Road 8502 has several unstable stream crossings over alluvial fans and high-gradient, contained channels.

Roads across fish-bearing streams may affect fish habitat by contributing fine sediments, consolidating and redirecting stream flows through road drainage structures, and re-routing sediment-laden water. These effects are generally associated with roads in the valley bottoms.

### Fisheries

The Tongass National Forest has placed greater emphasis on ensuring fish passage through stream crossings. The Hoonah Ranger District has replaced 38 culverts in the last two years that impeded fish passage on roads 8508 and 8576. This work is scheduled to continue until all fish passage concerns on roads 8578, 8504, 8534, 8513, and 8530 have been addressed.

Wetlands provide habitat for fish, birds, and fur-bearing animals. They also store sediment and water, maintaining stream flow through low flow periods. Fens are an important type of wetland, especially the rich calcareous fens. These wetlands are rare on the Tongass National Forest and make up approximately 1 percent of the Game Creek watershed. Fens provide numerous anadromous and resident fish rearing channels, transport nutrients and oxygenated groundwater to streams, and maintain higher primary productivity than bogs (USDA, 1994).

Riparian associated wetlands generally maintain stream flows during winter when water levels are low. Roads in wetlands can act as levees, French drains, or dams, depending on the construction method, and can divert, drain, or pond water for prolonged periods. Roads built by replacing peat with coarse rock act as conduits, which lowers the water table. The road acts as a dam when fine fill material, impermeable to water, is used to create the road prism. Roads have the potential to reduce the low flow character of the channel and thereby decrease salmon spawning, over-wintering, or rearing habitats (Brock, 2000). Nineteen road segments cross sensitive wetlands, and warrant site analysis to assess road impacts on wetland

# 3 Affected Environment

function (project file). About half of these sites are riparian associated wetlands and seven are on the arterial road between North Fork of Freshwater Creek and Pavlof Creek.

## Vegetation

The project area has a cool, moist climate that is influenced by the Alaska Current. The Alaska Current is part of the Kruoshio Current, which flows northward from the equator (Searby 1969). Compared to the rest of Alaska, the southern coast is cooler in summer, warmer in winter, and has more precipitation. Surface winds are moderately strong in most areas, and storm tracks pass from west to east along the coast every month of the year (Farr and Hard 1987:1).

The project area is within the northern reaches of the temperate rainforest. The forest can be roughly divided into five vegetation zones (Table 3-1) (Meehan 1974:2-5). Road access is needed to manage areas designated for timber production and to facilitate subsistence and recreation uses.

Table 3-1: Forest Vegetation Zones

Climax Forest	Beach Fringe	Streams/meadows	Muskegs	Alpine Meadows
Western hemlock	Oregon Crab apple	Western thimbleberry	Western hemlock	Crowberry
Sitka spruce	Red alder	Layall nettle	Lodge pole pine	Aleutian heather
Alaska cedar	Sitka Alder	Salmonberry	Alaska-cedar	Luetkea
Early blueberry	Sedge	Highbush cranberry	Labrador tea	Alpine azalea
Red huckleberry	Beach ryegrass	Pacific red alder	Bog laurel	Alaska blueberry
Devils club	Fescue grass	Stink current	Crowberry	Arctic wormwood
Salmonberry	Reed bent grass	Fireweed	Bog-rosemary	Nootka Lupine
Five-leaf bramble	Beach pea	Cow parsnip	Rusty menziesia	Alpine bluegrass
Rusty menziesia	Nootka lupine	Goatsbeard	Salal	Spotted saxifrage
Bunchberry	Goose-tongue	Yellow monkey flower	Sundew	Coast saxifrage
Goldthread	Western buttercup	Western buttercup	Cotton grass	Broad-petaled gentian
Simple-stemmed twisted stalk	Large flowered spear-grass	Northern geranium	Yellow marsh marigold	Narcissus-flowered anemone
False lily-of-the-valley	Yellow monkey flower	Beach strawberry	Yellow skunk cabbage	Mertens mountain heather
Yellow skunk cabbage	Seabeach sandwort	Saxifrage	False lily-of-the-valley	Stiff club moss
Deer fern		Hemlock parsley	Silverweed	Sedge
Lady fern		Villous cinquefoil	Club-moss	Bunchberry
Salal		Alaska violet	Bracken	Coastal fleabane
Club-moss		Deer cabbage	Nagoonberry	Deer cabbage
		Baneberry	Starflower	Nagoonberry
		Shooting star	Blueberry	Holy grass
			Bunchberry	

## Wildlife

Wildlife species depend on a variety of habitats to meet their needs. The Management Indicator Species (MIS) concept allows the total number of species in a project area to be reduced to a smaller set that represents the complex of habitats, species, and associated management concerns. MIS inhabiting the project area include Sitka black-tailed deer, American marten, northern goshawk, and brown bear. With the exception of the northern goshawk, these species are affected by the road system through disturbance and access for hunting and trapping.



Sitka black-tailed deer receive the highest sport hunting and subsistence use of all terrestrial wildlife species in Southeast Alaska. The State of Alaska and the Federal Subsistence Board determine the number of deer that can be harvested. Winter is the most limiting season on the Sitka black-tailed deer population. Deep snows bury deer forage and make escape from predators difficult. Low elevation, old-growth forest canopies intercept snow and keep snow depths low on the forest floor. It is easier for deer to find forage and escape predators in this type of forest. Road access, especially when coupled with severe winter conditions, could contribute to local population declines of Sitka black-tailed deer. Hunting access traditionally has been from the shore, but access from the roads has increased with the development of the road system.

Winter is also the most limiting season for marten, a species that also uses lower elevation old-growth forest habitats during this season. Coastal habitats (beach fringe) and riparian areas have the highest value, followed by upland habitats below 1,500 feet in elevation. Marten are easily trapped and prone to overharvest. Increasing access to their habitat increases the potential for overtrapping. The State of Alaska and the Federal Subsistence Board determine the number of marten that can be harvested. Current federal regulations prohibit the use of motorized vehicles to harvest marten in the project area.

The northern goshawk inhabits forested lands throughout the project area, favoring stands of old growth for nesting habitat. The northern goshawk is a sensitive species on the Tongass National Forest. The population viability in Southeast Alaska is of increasing concern because of the decline in mature and old-growth forests resulting from timber harvest. Radio-marked goshawks consistently selected productive old-growth forest habitat relative to availability, with 68 percent of all relocations occurring in this forest type. Roads may affect individual nests but have no effect on goshawk populations.

Brown bear use a variety of habitats from sea level to alpine. They are long-lived species with very low reproductive rates. The age of first breeding is between 5 and 10 years. The effects of environmental stresses on brown bear populations may be masked by their long lifespan and the delayed age of first breeding. Brown bears on Chichagof and Baranof Islands are genetically distinct from populations on Admiralty Island as well as the mainland. Some of the highest brown bear population densities in the world are found in the project area. The Salt Lake Bay/Portage area is a narrow isthmus that connects the project area with the rest of Chichagof Island. Disturbance in this corridor may inhibit movement, and hence genetic exchange between Northeast Chichagof Island and the rest of the island. Small, genetically distinct populations are more susceptible to extirpation if genetic exchange is disrupted.

The late-summer season is the most critical or limiting period for brown bear. During this season, many brown bears concentrate along low-elevation valley bottoms and salmon streams. Salmon obtained from mid-summer to early fall are needed to accumulate the energy reserves that sustain the bears through winter hibernation. Unroaded riparian areas are especially important along salmon streams where bears concentrate to feed.

All of the major stream systems are roaded in the project area. Roads follow streams in Old-Growth Habitat LUD's along Wukuklook, Gypsum, and Seal Creeks, as well as

## 3 Affected Environment

streams in the Salt Lake Bay/Portage and Bayhead areas. Old-Growth Habitat LUD's provide roadless areas with minimal disturbance for brown bears. Cover for visual obscurity is important to minimize interactions among bears and between humans and bears. Increases in human access to an area may increase human-induced bear mortality through increased legal and illegal hunting pressure, wounding losses, and defense of life or property. The use of any motorized land vehicle while hunting brown bear in the project area is prohibited by State and Federal hunting regulations.

### Recreation

The main arterial road system accesses destination points in Whitestone Harbor, False Bay, and Freshwater Bay. Trails with trailheads, and a fish pass exist at these locations and provide visitors with information about the forest and its ecology. The trails access picnic areas, lakes, beaches, and a scenic overlook, and are used for hiking, picnicking, beachcombing, exploring tide pools, gathering forest products, and other day use activities.

Hoonah residents also disperse across the Game Creek and Wukuklook-Gypsum Creek areas to hunt, gather forest products, view scenery, and drive for pleasure. Other forms of recreation include fishing, overland hiking, and riding snowmobiles. Fishing opportunities exist at the lower elevations and are mainly accessed by the arterial roads. The road system also accesses more remote areas for hiking and other dispersed types of recreation. Vertical bluffs, rock escarpments, and steeply incised streams provide challenging hiking opportunities. Snowmobile use is also prevalent on project area roads during the winter, generally occurring on the arterial roads that access open meadows.

High-clearance or all-terrain vehicle (ATV) use is generally associated with hunting. People use these vehicles to access areas off the main road system and to facilitate game retrieval. A few people have landing craft that allow them to transport ATV's to road systems not directly connected to Hoonah. These road systems include: Salt Lake Bay/Portage, Eight Fathom, and Seal Creek.

### Community of Hoonah

Hoonah has a population of about 900 people and a steady annual growth rate of about 1.4 percent since 1990 (TLMP EIS, 1997; Part 2 page 3-565). The economy is based on fish and fish processing, timber, retail trade and a growing interest in tourism. All parts of this economic base are seasonal.

Hoonah residents depend on subsistence to maintain their standard of living. Ninety-five percent of the households harvest some subsistence resources, and 50 percent of the meat supply is provided through subsistence hunting. Subsistence resources commonly used are: deer, fur-bearers, seals, salmon, marine fish, waterfowl, birds, shellfish, berries, and seaweed.

Hoonah hunters travel an average of 15 miles to their most reliable deer hunting areas. The most often used Wildlife Analysis Areas (WAA's) include the area directly adjacent to Hoonah (WAA 3524), the area around Whitestone Harbor and False Bay (WAA 3551), and the area around Neka Bay (WAA 4253). The most successful deer hunt areas are Salt Lake Bay and Portage area (WAA's 4253 and 3523).

The Hoonah City Council and Hoonah Indian Association would like to develop the tourism, recreation, and fishing components of their economic base. They favor a sustainable timber industry that emphasizes small business administration sales and supports local industries. The Hoonah residents would like the Forest Service to focus management on the sustained productivity of fish, subsistence resources, and old-growth habitat adjacent to their community.

The community of Hoonah needs a basic road system to access areas with high subsistence and recreation values. The road system needs to be managed so that resource integrity and productivity are maintained and hunted animals have reasonable opportunity to escape.



# 3 Affected Environment

# Chapter 4

## Environmental Consequences

### Issue 1: Brown Bear Habitat

#### Feeding Areas

Roads adjacent to salmon spawning habitat can negatively affect brown bear feeding behavior. High-quality brown bear feeding habitat is found on low gradient Class I estuary, floodplain and moderate gradient-mixed control stream types. Salmon are most likely to spawn and are more easily captured in these stream types (ADF&G, 1998). Forested buffers should be 500 feet wide along these high-quality feeding areas to provide cover between bears and between humans and bears (TLMP, 1997; page 4-114). A total of 35 miles of road – short road segments scattered across the project area (Fig. 4-1) – exist in forested buffers near high-value bear feeding areas.

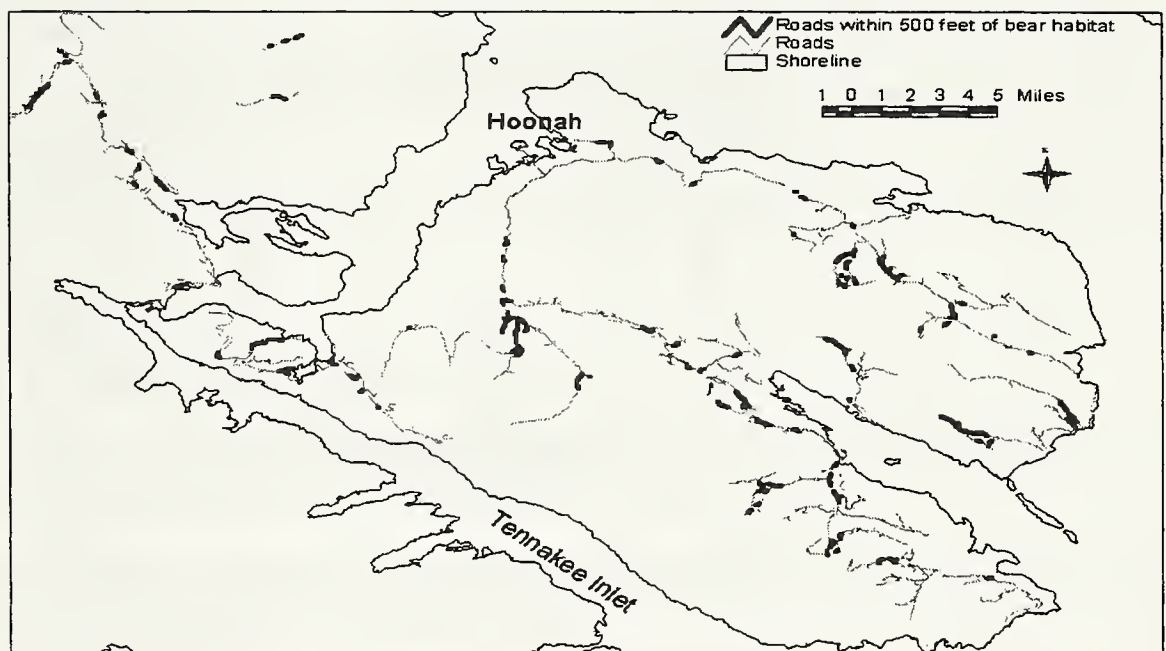


Figure 4-1: Roads Located Within 500 Feet of Forested Salmon Spawning Streams.

# 4 Environmental Consequences

## Bear Mortality

Roads are associated with brown bear mortality through legal and illegal harvest and defense of life and property (DLP) encounters (ADF&G, 1998). Brown bear mortality increases as road density and the use of roads increases. Under State and Federal regulations, motorized land vehicles cannot be used in the project area to hunt brown bear. Therefore, closing roads under any of the alternatives would not affect the legal take of brown bears. Closing roads near the higher quality bear habitat (within 500 feet of salmon spawning streams) will decrease the likelihood of illegal hunting or DLP mortality.

The brown bear population is estimated to be 320 bears, and human harvest of bears is limited to less than 4 percent of the population. Thus, an annual harvest of approximately 13 bears can be sustained in the project area. DLP bear mortality has increased on the island and in some years has exceeded 50 percent of the total human-caused mortality (Fig. 4-2). DLP mortality has averaged almost 25 percent (or three bears) of the mortality quota in the last five years. However, most of the DLP mortality (two of these three bears) has occurred within the City of Hoonah or at logging camps. The number of bears killed illegally and in DLP limits the number of bears that can be legally hunted.

In addition to the road length along quality bear feeding sites, the total road mileage in bear habitat indicates the potential for DLP and illegal hunting mortality.

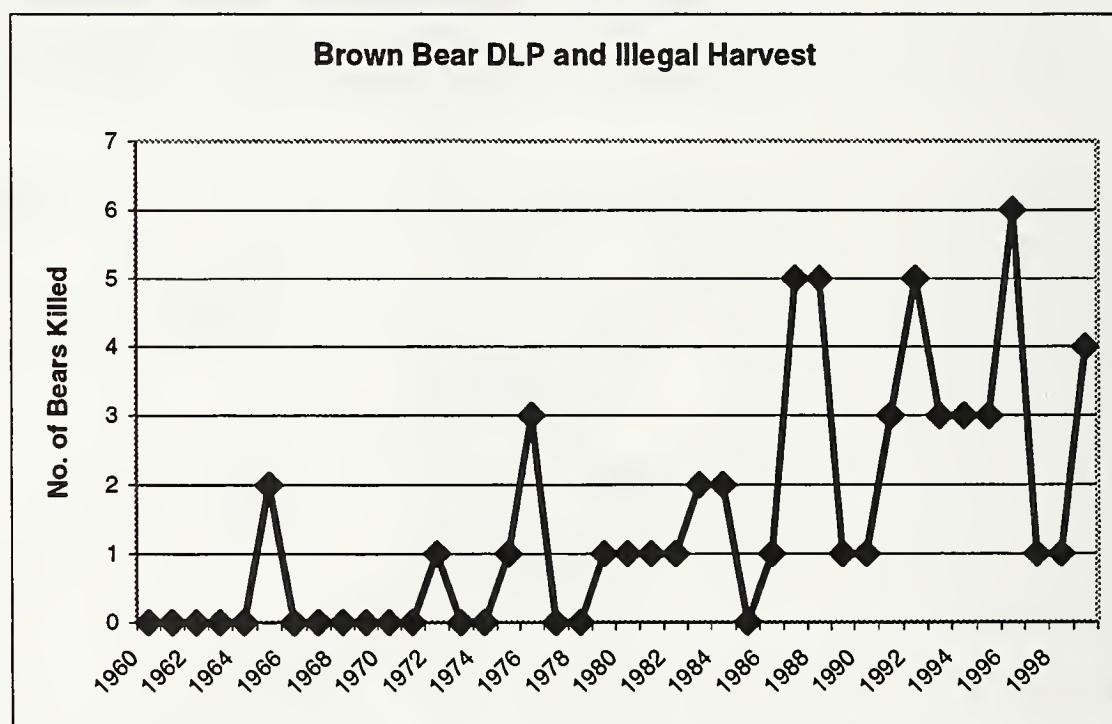


Figure 4-2. Brown Bears Killed Illegally or in Defense of Life or Property (DLP) in the Project Area, 1960-2000

### Alternative 1: No Action

Motorized vehicles would access 54 percent of the road mileage adjacent to high-quality feeding habitat on salmon streams (Table 4-1). About 59 percent of the roads through brown bear habitat (Table 4-2) would be open to motorized use. Almost the same area of high quality feeding sites would be accessed in this alternative as in Alternatives 2 and 4. Therefore, the potential for illegal bear hunts or DLP encounters



would be similar. Fewer chance encounters would be likely than in Alternative 2, since less total road mileage would remain open.

## Alternative 2

Motorized vehicles would access 57 percent of the road mileage adjacent to high-quality feeding habitat on salmon streams (Table 4-1). About 64 percent of the roads through brown bear habitat (Table 4-2) would be open to motorized use. This alternative accesses essentially the same amount of high quality feeding sites as Alternatives 1 and 4. The potential for illegal bear hunts or DLP encounters would be second to Alternative 4 because of the high-quality feeding habitat accessed and almost two-thirds of the total road mileage remains open.

## Alternative 3

This alternative maintains the least motorized access (43 percent) adjacent to high-quality feeding habitat on salmon streams (Table 4-1) and the least open road mileage (49 percent) through brown bear habitat (Table 4-2). There would be minimal potential for illegal bear hunting or DLP encounters. Twenty miles of road adjacent to high-quality feeding habitat would be closed to motorized use.

## Alternative 4

This alternative provides the least protection to brown bear habitat, though it is similar to Alternatives 1 and 2. The most motorized access through high-quality feeding habitat and bear habitat is maintained. About 60 percent of the road mileage adjacent to high-quality feeding habitat (Table 4-1) and 68 percent of the roads would be open to motorized use (Table 4-2). The potential for illegal hunting and DLP encounters would be highest under this alternative.

**Table 4-1: Maintenance Level and Miles of Road Within 500 Feet of Forested Class I Stream Types on the Project Area**

Maintenance Level	Miles of Road			
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
1 (closed)	16	15	20	14
2 (HCV)*	4	4	3	5
3 (passenger)	15	16	12	16

\*HCV: High Clearance Vehicle – includes all vehicles with ground clearance greater than 5 inches

**Table 4-2: Maintenance Level and Miles of Road in the Project Area**

Maintenance Level	Miles of Road			
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
1 (closed)	106	91	130	81
2 (HCV)*	15	34	16	38
3 (passenger)	135	131	110	137
Total Open	150	165	126	175

\*HCV: High Clearance Vehicle – includes all vehicles with ground clearance greater than 5 inches

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## Issue 2: Soil Stability and Water Quality

### Unstable Soils

Roads crossing unstable soils, active alluvial fans, and high-gradient contained stream channels present a higher potential for slope failure and risk of introducing sediment to associated streams than roads that cross stable soils and channel types. One example is road 85093 in the Bayhead area; landslides have contributed soil and sediment to streams that support anadromous fish populations. The road mileage across unstable soils is an indicator of the risk of slope failure that is used to compare the alternatives. Higher open road mileage across unstable soils and steep slopes would indicate a greater risk of slope failure. Road construction and maintenance methods may ameliorate the risk. Table 4.3 displays the road mileage across unstable soils that are open or closed to vehicle use for each alternative.

Table 4-3: Maintenance Level and Miles of Road across Unstable Soils on the Project Area

Maintenance Level	Miles of Road			
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
1 (closed)	38	37	48	33
2 (HCV)*	7	12	3	12
3 (passenger)	24	20	18	24

\*HCV: High Clearance Vehicle – includes all vehicles with ground clearance greater than 5 inches

### Sensitive Stream Crossings

Sensitive stream crossings are crossings located on alluvial fans (AF1, AF2) or that span high-gradient contained channels (HC3, HC6) (Paustian et al., 1992). HC3 and HC6 stream types carry high bed-loads or are prone to shifting channels, high debris transport, and mass movement. Crossings on these types of streams have a high potential for failure and present a high risk to downstream water quality and fish habitat. Road 8502 and the upper end of road 8504 in the Game Creek area have several unstable, sensitive stream crossings. The stream crossing structures on road 8504 have recently been removed and this section of road would remain closed under all alternatives. The number of sensitive stream crossings on open and closed roads in the project area are displayed in Table 4-4. Culverts and bridges would be removed from Maintenance Level 1 (closed) roads, except for the Game Creek road system in Alternative 1.

Table 4-4: Maintenance Level and Number of Sensitive Stream Crossings on the Project Area

Maintenance Level	Number of Sensitive Stream crossings			
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
1 (closed)	106	94	117	94
2 (HCV)*	9	21	14	20
3 (passenger)	57	57	41	58

\*HCV: High Clearance Vehicle – includes all vehicles with ground clearance greater than 5 inches



## Riparian Zones

There are about 25,300 acres identified for riparian management in the project area. Roads occupy approximately 126 riparian acres, less than 1 percent of the total riparian area (TLMP, 1999; page 4-58 to 4-73). Table 4-5 displays the maintenance level of the road area in riparian zones under each alternative. Maintenance level 1 roads in riparian areas would not be available to motorized use.

**Table 4-5: Maintenance Level and Area of Road in Riparian Zones**

Maintenance Level	Acres of Road in Riparian Areas			
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
1 (closed)	67	56	79	55
2 (HCV)*	9	22	10	22
3 (passenger)	50	48	37	49

\*HCV: High Clearance Vehicle – includes all vehicles with ground clearance greater than 5 inches

### Alternative 1: No Action

Approximately 31 of the 69 miles of road that cross unstable soils in the project area would remain open under the no-action alternative (Table 4-3). Eighty-two structures on sensitive stream crossings would remain in place, including the 16 structures on the gated Game Creek road system. Motorized use of the road system would be allowed for administrative purposes but not for general public access. About 53 percent of the road area in riparian zones would be closed to motorized use (Table 4-5).

Roads 8534 and 85093 would remain open to vehicle use. The last two miles of road 8534 are prone to slumping and about a quarter mile of road 85093 has a high potential for slumps and landslides. These roads would require annual monitoring and maintenance. The seasonal closure on road 8534 would eliminate vehicle use during the period with the highest potential for incurring road damage. The risk of slope failure on sections of roads 8534 and 85093 is high, with the potential to degrade anadromous fish habitat. In the event of a landslide, the roads would be expensive to re-open or stabilize. Additional damage to fish habitat would be expected before the road could be stabilized.

The Game Creek road system would be closed (gated) at the junction with road 8508. The eight sensitive stream crossings on road 8502 are high flow channels that carry large gravel and cobble bed-loads (3 AF1 and 5 HC6 channels). The bed-load is relatively clean of fine sediments, which reduces the negative effect on aquatic resources downstream. However, this high bed-load can fill and dislodge culverts and other crossing structures and would continue to require frequent monitoring and maintenance. Eight other sensitive stream crossings (two AF2, two HC3, and four HC6) would also require maintenance on roads 8576 and 85765. The Game Creek road system and sensitive stream crossings are included under the 'closed' category in the tables above since this road system is not open to the public.

### Alternative 2

The same road mileage would cross unstable soils as in Alternative 1 (Table 4-3). However, four more structures on sensitive stream crossings would be removed, leaving 78 structures at sensitive crossings in place (Table 4-4). About 44 percent of the road area in riparian areas would be closed to motorized use (Table 4-5).



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Roads 8534 and 85093 would both be open to high-clearance vehicles except the last mile of road 8534, which would be closed. The effects of this alternative would be similar to those stated for Alternative 1.

Roads 8502, 8576 and the lower end of road 8504 would be open to passenger vehicles and 85765 would be open to high-clearance vehicles. Sixteen sensitive stream crossing structures would remain in place and require annual monitoring to ensure that high bed-loads do not threaten the crossing structures.

### Alternative 3

This alternative closes the most roads across unstable soils, removes the most sensitive stream crossing structures, and reduces motorized access through the most riparian area. Approximately 21 miles of road crossing sensitive soils would remain open to motorized use (Table 4-3). Structures at 117 sensitive stream crossings would be removed under this alternative, leaving 55 crossings in place (Table 4-4). About 62 percent of the road area in riparian areas would be closed to motorized use (Table 4-5).

The last 2.5 miles of road 8534 and all of 85093 would be closed and all stream crossings and culverts removed. In addition, water bars would be installed and out-sloped road material would be placed in key areas to support the steeper cut banks. Landslides may still occur on these slopes. However, they would not be associated with stream crossings and would be less likely to directly affect anadromous fish habitat. The risk of degrading anadromous fish habitat would be lowest under this alternative.

Roads 8576, 85765 and 8504 would be closed at their junctions with road 8502, and culverts would be removed at stream crossings. Road 8502 would remain open and require regular maintenance of eight sensitive stream crossing culverts.

### Alternative 4

The effects of this alternative would be similar to Alternatives 1 and 2, as approximately 36 miles of open road cross unstable soils (Table 4-3). This alternative would remove the same number of structures at sensitive stream crossings (Table 4-4) and would have the same area of road in riparian zones closed to motorized use (Table 4-5) as in Alternative 2. The effects on sensitive stream crossings in the Game Creek area under this alternative would be the same as Alternative 2.

Road 8534 would be managed the same as in Alternative 3, which would prevent negative effects on anadromous fish streams associated with this road. Road 85093 would be managed the same as in Alternative 2. Thus, the risk to anadromous fish habitat on the streams associated with this road would be high.

## Issue 3: Old-Growth Habitat Integrity

The purpose of the Old-Growth Habitat LUD is to provide habitat for old-growth resources and associated species, particularly brown bear. Roads in these areas are compatible with old-growth habitat management objectives (TLMP, 1997). Existing roads may be closed if their use contributes to disturbance or damage to wildlife and fish, their habitat or productivity. Off-highway vehicle use must not degrade or disturb fish and wildlife or their habitat. Project criteria for road management in Old-Growth Habitat is to close all roads that do not provide access to high-value subsistence areas, recreation destinations, or private land. Currently, about 77 miles of

road are located within Old-Growth Habitat LUD's in the project area. About 19 miles access private land or ongoing management activities.

Roads are associated with wildlife disturbance, habitat fragmentation, and decreased fish habitat quality. Specifically, roads are associated with increased brown bear mortality through legal and illegal harvest and defense of life and property (DLP) encounters (ADF&G, 1998). Properly closing roads in Old-Growth Habitat LUD's will increase the quality of bear habitat by decreasing disturbance and the likelihood of illegal harvest and DLP mortality. It will also mitigate some of the effects of habitat fragmentation. The effects on fish habitat are discussed later in this document.

## **Alternative 1: No Action**

This alternative closes the least road mileage in Old Growth Habitat LUD's of any of the alternatives. Twenty-eight miles of road are closed in Old-Growth Habitat under this alternative. Roads are left open in high-quality bear feeding areas in the Salt Lake Bay/Portage, Bayhead, Seal Creek, and Gypsum Creek areas. Disturbance of bears feeding at high quality sites in Salt Lake Bay/Portage and Seal Creek areas, and the potential for illegal bear hunts would be higher than the Proposed Action.

Road 8530 at the mouth of Wukuklook Creek also accesses high-quality feeding areas. This road would remain open in all alternatives because it accesses private land and high use recreation sites. In addition to other old-growth characteristics, the Salt Lake Bay/Portage area is an important wildlife corridor between northeast Chichagof and the rest of Chichagof Island, especially for brown bear. There is no information on the effect current disturbance from these open roads has on wildlife movement. Easy hunter access on the open roads and disturbance created by motorized vehicles in this area would be higher under this alternative than Alternatives 2 and 3. The Salt Lake Bay/Portage, Seal Creek and Gypsum Creek roads are used for hunting, but are not frequently used for other subsistence or recreation activities.

## **Alternative 2**

Most of the roads (52 miles) in the Old-Growth Habitat LUD's are closed in this alternative. Road 8509 in the Bayhead area accesses a high-quality bear feeding area but would remain open, since both it and road 85093 access alpine habitat. Wildlife habitat quality would be diminished adjacent to roads due to the associated vehicle disturbance. This road is relatively close to Hoonah but opportunities to gather forest products and subsistence hunt are limited. The potential for disturbance to wildlife movement between northeast Chichagof and the rest of the island would decrease because the roads in the Salt Lake Bay/Portage area would be closed.

## **Alternative 3**

Under this alternative, all roads would be closed in the Old-Growth Habitat LUD's except those needed to access private land or ongoing management activities. Thus, 58 miles of road would be closed, including the Salt Lake Bay/Portage, Seal Creek, and Gypsum Creek areas. These closures would decrease vehicle disturbance to all wildlife in the Old-Growth Habitats, especially the wildlife corridor in the Salt Lake Bay/Portage area. The potential for illegal hunting would decrease relative to the Proposed Action.



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## Alternative 4

Forty-four miles of road are closed in the Old-Growth Habitat LUD's under this alternative. The effects of this alternative are intermediate between Alternative 1 and Alternative 2. The ridge roads in the Salt Lake Bay/Portage area would be open. Vehicle use on these roads would disturb wildlife and inhibit movement through the area more than under Alternatives 2 and 3 but less than Alternative 1. The section of road 8579 that accesses high-quality bear feeding sites would be closed to motorized access.

## Issue 4: Motorized Access for Subsistence

Hoonah residents rely on subsistence to meet their household needs. About 95 percent of the households harvest some subsistence resources, and 50 percent of the meat supply is provided through subsistence hunting. Subsistence resources commonly used are: deer, fur-bearers, seals, salmon, marine fish, waterfowl, birds, shellfish, berries, and seaweed. The most important subsistence resources are salmon, deer, and finfish other than salmon. Traditional hunt areas graduate inland from the coast and are concentrated around Hoonah and Neka Bay (TLMP EIS, 1997; page H-18).

Hoonah hunters travel an average of 15 miles to their most reliable deer hunting areas. The most often used areas are accessible by road from Hoonah (including the Whitestone Harbor-Gypsum Creek area) and Neka River-Eight Fathom area. The most successful deer hunt areas are in the Neka River-Eight Fathom area and Salt Lake Bay/Portage and Game Creek area.

None of the alternatives would change access along the coastal areas. All alternatives leave the arterial roads open and provide motorized access across the Hoonah Ranger District. In addition, many collector and local roads remain open in all alternatives. Therefore, all alternatives maintain reasonable access, abundance, and distribution of subsistence resources. There is not a significant possibility to a significant restriction of subsistence use in the project area under any alternative.

## Alternative 1: No Action

Closing the Game Creek road system would limit public access to foot travel. Hunting would continue, though at reduced levels. Fishing and gathering forest products would most likely be concentrated at the junction of roads 8502 and 8508 because the area is close to Hoonah and on the main road system.

The Salt Lake Bay/Portage road system and road 8610 in Seal Creek would remain open. Hunters with landing craft would continue to transport trucks or ATV's to hunt from these roads.

Roads 8509 and 85093 in Bayhead would be open, as would road 8534 in Iyouktug. Hunting, fishing, gathering forest products, and other subsistence uses would continue in the Bayhead area. The seasonal closure on road 8534 would limit motorized access during the deer hunting season. Hunting use would continue though possibly by fewer hunters. Both of these road systems are connected to the main Hoonah road system.

The lower end of road 8533 would be open but the upper end would be closed. Subsistence deer hunting would continue on this road system at reduced levels because access to better hunting at the higher elevations would be by foot.



Under this alternative, 150 miles of road would remain open. Motorized access would be maintained across the District. Road closures would improve the quality of wildlife habitat by providing areas of limited human disturbance and hunting pressure.

## **Alternative 2: Proposed Action**

Motorized access would be maintained on the Game Creek road system. Hunting and trapping would continue in their present manner. Fishing and gathering forest products would continue and be dispersed along the streams and road system. The Game Creek road system is close to Hoonah and connected to the main road system. It would continue to receive high levels of use.

The Salt Lake Bay/Portage road system and road 8610 in Seal Creek would be closed to most motorized use by the removal of stream crossings. Access would be by foot and to a limited extent, ATV's. ATV use would be limited by the removal of stream crossings. Use of these road systems is currently limited because the roads are not connected directly to the main Hoonah road system and require boats to access them.

Roads 8509 and 85093 in Bayhead would be open, as would road 8534 in Iyouktug and road 8533 in Suntaheen Creek. Hunting, fishing, gathering forest products, and other subsistence uses would continue and be dispersed across these areas. All of these roads are connected to the main road system from Hoonah.

Under this alternative, 165 miles of road would remain open. Motorized access would be maintained across the District. Road closures would enhance wildlife habitat by providing areas of limited human disturbance and hunting pressure.

## **Alternative 3**

Most of the Game Creek road system would be closed except for road 8502. The closed roads would be accessible by foot or ATV. Hunting would continue at reduced levels throughout the area and would become more dispersed farther from the roads. Fishing and gathering forest products would be concentrated along road 8502. Subsistence use of this road would continue to be high because it is close to Hoonah and connected to the main road system.

The Salt Lake Bay/Portage and Seal Creek road systems would be closed and the effects would be the same as in Alternative 2.

The Bayhead road system would be closed, as would the upper end of road 8534 in Iyouktug. Hunting in these areas would continue but at reduced levels because access would be by foot. The lower end of road 8534 and road 85341 would be open and accessible by passenger vehicles for hunting, gathering forest products and other subsistence uses. Both of these road systems are connected to the main Hoonah road system.

The lower end of road 8533 would be open but the upper end would be closed. Subsistence deer hunting would continue on this road system at reduced levels because access to better hunting at the higher elevations would be by foot.

Under this alternative, 126 miles of road would remain open. Motorized access would be maintained across the District. Road closures would enhance wildlife habitat by providing areas of limited human disturbance and hunting pressure.

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## Alternative 4

The Game Creek and Suntaheen Creek road systems would be managed as in Alternative 2 and have the same effects.

The ridge roads, roads 8579 and 85794, in Salt Lake Bay/Portage would be open to passenger vehicles and ATV's. Hunters with landing craft boats would continue to transport trucks or ATV's to use on these roads. Road 8610 in Seal Creek would be closed to motorized access.

Road 8509 would be accessible to passenger vehicles, while roads 85093 and 85092 would be accessible by ATV. Motorized access on road 85092 would have limited impact on subsistence uses since the road does not access valuable subsistence areas. The Iyouktug road system would be managed as in Alternative 3 and the effects on subsistence uses would be the same.

Under this alternative, 175 miles of road would remain open. Motorized access would be maintained across the District.

## Issue 5: Motorized Access for Recreation

Many of the activities Hoonah residents participate in for subsistence are similar to those they participate in for recreation. At least half of the recreation opportunities are boat based. The other half are associated with the road system. The main (arterial) road system accesses recreation destinations in Whitestone Harbor, False Bay, and Freshwater Bay and more dispersed use areas in Game Creek and Wukuklook-Gypsum Creek. In addition to accessing recreation areas, the road system provides opportunities for snowmobile and ATV use. Some people own small landing craft boats, which allows them to transport ATV's to road systems not directly connected to Hoonah. These road systems include: Salt Lake Bay/Portage, Eight Fathom, and Seal Creek.

None of the alternatives would close roads that access destination points. However, motorized access to different dispersed use areas changes by alternative.

### Alternative 1: No Action

The entire Game Creek road system would be closed. People would be able to access the area on foot. Use would likely continue and concentrate at the junction of roads 8502 and 8508 because the area is close to Hoonah. Road 8610 (Seal Creek drainage) and the Salt Lake/Portage area roads would remain open and available for vehicle use during the deer hunting season. Approximately 135 miles of road would be maintained for passenger vehicles and another 15 miles would be maintained for high-clearance vehicles. Thus, 59 percent of the road system would be available for motorized travel.

### Alternative 2

Most of the Game Creek road system would be open except for the upper end of roads 8504, 85761, and 85764. People would be able to access this area using passenger-type vehicles and would generally not use ATV's. Use would be distributed along Game Creek and road 8576. The Seal Creek and Salt Lake Bay/Portage road systems are not connected to the main Hoonah road system and would be closed. The removal of stream crossing structures over incised channels would inhibit vehicle and ATV access. The roads would be open to public use though access would generally be by



foot. Roads 8509 and 85093 in the Bayhead area would remain open and current uses on these roads would not change. Roads 85092 and 85091 would be closed. Approximately 131 miles of road would be maintained for passenger vehicles and another 34 miles would be maintained for high-clearance vehicles. About 64 percent of the road system would be available for motorized travel.

### **Alternative 3**

The Game Creek road system would be closed except for road 8502. Passenger vehicle use would likely concentrate along this road and the lower end of Game Creek. ATV and foot traffic may increase on roads 8576 and 8504. The Seal Creek, Salt Lake Bay/Portage, and Bayhead road systems would be closed and the stream crossing structures removed, as in Alternative 2. Since vehicle and ATV access would be inhibited by the removal of the structures, public access would generally be by foot. Approximately 110 miles of road would be maintained for passenger vehicle use and another 16 miles would be maintained for high-clearance vehicles. About 49 percent of the road system would be available for motorized travel.

### **Alternative 4**

The Game Creek road system would be managed as in Alternative 2 and would have the same effects. The Seal Creek road system would be closed and public access would be mostly by foot. Vehicle traffic would be limited to the ridge road in the Salt Lake Bay/Portage area. Most of the Bayhead road system would be open and use would not change. Approximately 137 miles of road would be maintained for passenger vehicle use and another 38 miles for high-clearance vehicles. About 68 percent of the road system would be available for motorized travel.

## **Economics**

Forest Service road management policy directs us to maintain the minimum forest transportation system that best serves current and anticipated management objectives and public uses of the National Forest (FSM 7703). Both the access benefits and ecological costs of road-associated effects are to be analyzed. In this analysis, the most heavily used roads are maintained to provide safe, efficient travel and reduce adverse environmental impacts. Roads needed for timber sale access but not needed for general access would be placed in storage until they are needed again. Most of the roads closed through this project would have culverts and bridges removed; waterbars installed; and drainage ways re-established. In some specific cases, unstable road shoulders would be removed. These actions would leave the roads in a stable condition until needed and would prevent or reduce erosion, landslides, and the degradation of stream channels, riparian areas, wetlands and fish habitat. The roads would require almost no maintenance until the time they are re-opened and would not divert limited road maintenance funds from the better-traveled roads.

The District's road maintenance budget has been fluctuating over the last few years and has increased lately to address deferred road maintenance needs. Funding is likely to return to historic levels once this deferred maintenance is completed. It is important to designate a road system that is efficient to maintain so another backlog does not develop. Roads maintained for passenger vehicles (maintenance level 3) generate most of the annual road maintenance costs on the Hoonah Ranger District. The road mileage in each maintenance level and the estimated annual cost of maintenance are



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displayed for each alternative in Tables 4-6 and 4-7, respectively. Actual bid prices, field costs, and overhead may vary and are not reflected in these estimates. The estimates displayed in the tables below are for comparative purposes to describe differences between alternatives. Deferred maintenance needs are not included in the cost estimates or alternative analysis.

**Table 4-6: Miles of Road by Maintenance Level on the Project Area**

Maintenance Level	Miles of Road			
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
1 (closed)	106	91	130	81
2 (HCV)*	15	34	16	38
3 (passenger)	135	131	110	137
Total open roads	150	165	126	175

\*HCV: High Clearance Vehicle – includes all vehicles with ground clearance greater than 5 inches

**Table 4-7: Annual Road Maintenance Cost by Maintenance Level on The Project Area**

Maintenance Level	Estimated Annual Road Maintenance Dollars			
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
1 (closed)	**3,500	0	0	0
2 (HCV)*	15,000	14,000	11,000	12,000
3 (passenger)	128,500	116,000	109,000	122,000
Total Cost	147,000	130,000	120,000	134,000

\*HCV: High Clearance Vehicle – includes all vehicles with ground clearance greater than 5 inches

\*\*Maintenance cost of closed (gated) roads in Game Creek watershed.

## Alternative 1: No Action

The estimated cost of closing roads in this alternative would be about \$135,000. No structures would be recovered under this alternative so no additional benefits would accrue from their salvage.

## Alternative 2

The estimated annual road maintenance cost of this alternative would be approximately \$17,000 less than Alternative 1.

The total cost of closing roads in this alternative would be about \$377,000. The cost of road closures would be offset by the recovery of eight steel bridges from roads 8579 and 8530, valued at about \$550,000. A gain of about \$173,000 would be realized by replacing the deteriorating log bridges with the recovered bridges on the roads remaining open.

## Alternative 3

The estimated annual road maintenance cost of this alternative would be approximately \$27,000 less than Alternative 1, No Action.

The total estimated cost of closing the roads designated in this alternative would be about \$633,000. The same number of bridges would be recovered from roads 8579

and 8530 as in Alternative 2, which would offset the cost of road closure. Thus, the cost of closing roads under this alternative would be about \$83,000.

## **Alternative 4**

The estimated annual road maintenance cost of this alternative would be approximately \$13,000 less than Alternative 1, No Action.

The total estimated cost of closing the roads designated in this alternative would be about \$309,000. Five of the bridges on roads 8579 and 8530 would be recovered. These bridges have a total value of about \$350,000 that would offset the cost of road closure. A gain of about \$41,000 would be realized by replacing the deteriorating log bridges with the recovered bridges on roads remaining open.

All of the alternatives reduce the annual maintenance costs. The cost reduction is highest under Alternative 3 but maintenance costs under Alternatives 2 and 4 are within expected budgets. Some impacts of the road system cannot be quantified with a monetary value and these are described in the effects analysis of soil and water, wildlife, and fisheries sections. Roads that cross high hazard soils or unstable streams may require more frequent and expensive maintenance. The benefits of closing roads would reduce the erosion and landslide potential, and improve water quality, fish and wildlife habitat, and productivity.

## **Fisheries**

Arterial roads would remain open under all alternatives. They are primarily located in valley bottoms and on lower valley side-slopes, which limit sediment sources from road cut slopes and embankments. These roads are most often associated with fish stream crossings. Road construction has the potential to affect upstream fish passage through improper placement or sizing of culverts. Roads can also affect fish habitat through the introduction of fine sediment, consolidation and redirection of flows by road drainage structures, increased landslide potential due to road location and design, and re-routing of sediment-laden water.

The number of crossings on Class I and II<sup>1</sup> streams and the number of sensitive stream crossings (see Watershed, above) in each alternative are indicators of potential effects on aquatic resources. The more stream crossings that need to be maintained indicate a higher risk of negative effects to aquatic resources. For each alternative, Table 4-8 displays the number of fish stream crossings to be maintained (maintenance level 2 or 3) and the number of structures to be removed (maintenance level 1).

The Tongass National Forest has recently placed greater emphasis on improving fish passage at stream crossings. The Hoonah Ranger District has replaced 38 fish passage barriers in the last two years, especially on roads 8508 and 8576. This work is planned to continue until all road-associated fish passage barriers are corrected. Other roads with identified fish passage barriers include: 8578, 8504, 8534, 8513, and 8530.

Alternative 3 has the fewest crossings over Class I and II streams than the other alternatives (Table 4-8). Alternatives 2 and 4 are roughly comparable, and maintain

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<sup>1</sup> Class I streams have anadromous or adfluvial fish habitat; or high quality resident fish waters, or habitat above fish migration barriers known to be reasonable enhancement opportunities for anadromous fish. Class II streams have resident fish populations and generally steep gradient where no anadromous fish occur and otherwise do not meet Class I criteria.



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the most crossings over Class I and Class II streams. Alternative 1 is intermediate between Alternative 3 and Alternatives 2 and 4.

Roads 8578, 8513, and 8530 would not be closed under any alternative because they are arterial roads. Stream crossings that impede fish passage would be re-installed or modified to facilitate fish passage. The upper two miles of road 8530 would be closed under all alternatives except Alternative 1.

Table 4-8: The Maintenance Level and Number of Crossings on Class I and Class II Streams in the Project Area

Maintenance Level	Number of Stream Crossings							
	Alt. 1		Alt. 2		Alt. 3		Alt. 4	
	Class I	Class II	Class I	Class II	Class I	Class II	Class I	Class II
1 (closed)	73	56	70	52	84	69	64	53
2 (HCV)*	8	7	14	17	8	5	13	15
3 (passenger)	79	45	79	42	69	37	84	43

\*HCV: High Clearance Vehicle – includes all vehicles with ground clearance greater than 5 inches

The upper 2.5 to 3 miles of road 8534 would be closed under Alternatives 3 and 4, and all stream crossings would be removed. Under Alternatives 1 and 2, the crossings impeding fish passage would be replaced.

The upper 2.5 miles of road 8504 would be closed under all alternatives. The entire road would be closed under Alternatives 1 and 3, but the crossings would be removed only under Alternative 3. In Alternatives 1, 2, and 4, crossings that impede fish passage would be re-installed properly. Best Management Practices would continue to be applied when identified fish passage barriers are corrected and during other crossing restoration work.

## Essential Fish Habitat

This assessment follows the agreement signed August 25, 2000 between the National Marine Fisheries Service and the Forest Service and includes 1) a description of the proposed action; 2) an analysis of individual and cumulative effects of the action on Essential Fish Habitat (EFH), the managed species, and associated species such as major prey species, including affected life histories; 3) the Forest Service's views regarding effects on EFH; and 4) a discussion of proposed mitigation, if applicable.

The proposed action and alternatives to the proposed action are described in Chapter 2. The Soil Stability and Water Quality and Fisheries sections of this chapter contain specific discussions of road management by alternative and its effects on the aquatic environment. This analysis assumes fish habitat would benefit by removing crossing structures on Class I and II streams. The more crossings removed from these stream classes, the greater the long-term benefit, even though short-term sediment inputs would be expected during structure removal.

Essential Fish Habitat in this analysis includes all stream segments and lakes where salmon species occur during any period of the year. In essence, this includes all Class I stream and lake habitat on the Hoonah Ranger District (Fig. 1-2). Anadromous species in the project area include coho, pink, chum and sockeye salmon, steelhead, sea-run cutthroat and Dolly Varden char. These species spawn, incubate, and rear



primarily in the lower stream reaches. The juvenile coho, sockeye, steelhead, cutthroat, and Dolly Varden char feed predominantly on aquatic and terrestrial insects in freshwater. Juvenile chum and pink salmon feed in estuary and near-shore habitats.

Roads in the project area are generally upstream or adjacent to identified essential fish habitat. Potential effects of roads on EFH would be degraded water quality and altered physical stream habitats. Degraded water quality results from increased water temperature or suspended sediment. Potential changes in physical habitat include filling pools with sediment and changing substrate composition. Pools are important for rearing and over-wintering of juvenile coho and other fish. Higher sediment (fines) levels in the substrate can reduce survival of fish eggs and change the assemblages of aquatic insects used by fish for food.

The Forest Service determined this project “may adversely affect EFH” and continues the consultation process with the National Marine Fisheries Service through this analysis.

None of the alternatives would cause detectable effects on the managed fish species because Forest Plan direction and applicable Best Management Practices (BMP’s) would be applied during implementation of road closure, decommissioning, and maintenance activities. Forest Plan direction and BMP’s were developed through interagency negotiation and provide state-of-the art protection of fish habitat.

Occasionally, Forest Plan direction and BMP’s are not fully implemented or are not fully effective. Thus, there is always some risk to EFH when management actions are taken. The risk of this project is minimal. Stream crossings structures would be removed on closed or decommissioned roads, which would reduce their potential of failure during storms. This action would also remove structures that interfere with natural fish movement patterns. On the open roads, efforts to restore fish passage through improperly installed stream culverts would continue. Thus, all the alternatives would benefit salmon streams by closing roads and removing stream crossing structures. Depending on the alternative chosen, 24 to 73 miles of road would be closed; 30 to 66 crossing structures on fish streams (Class I) and 18 to 41 sensitive crossings (Table 2-2) would be removed. These restoration actions would reduce the current risk and negative effects of roads on EFH in the project area.

No mitigation measures are proposed or necessary.

### **Aquatic Systems and Recreational Fish (Executive Order 12962)**

Fishing associated with the Hoonah road system is low relative to the fishing that occurs in the saltwater around Hoonah. Valuable fishing opportunities are accessed from the road system on the lower portions of the larger fish producing streams. The road system also accesses saltwater fishing destinations in Whitestone Harbor and Freshwater Bay. In all alternatives the proposed road closures are on remote upland roads or spur roads which do not access valuable sport and subsistence fisheries. The arterial roads remain open in all the alternatives and provide access between Hoonah and Freshwater Bay, lower Game Creek, Spasski Creek, Kennel Creek, Gypsum Creek, and Pavlof Creek. Access to recreational and subsistence fishing opportunities would remain at current levels because the arterial roads remain open and most of the fishing activity would continue in the saltwater.

# 4 Environmental Consequences

## Heritage Resources

Evaluation of heritage resource data collection needs and survey strategy follows the protocol described in the 1995 agreement between the Forest Service Alaska Region, the Alaska State Historic Preservation Office (SHPO), and the Advisory Council on Historic Preservation (#95MOU-10-029). The Forest Service assesses the need to conduct surveys in the project area (#95MOU-10-029, Appendix I). The inventory strategy applied to this project followed the strategy specified in Appendix II of the agreement and meets the requirements of 36 CFR 800.

Predictive models developed from 30 years of archaeological survey data in Southeast Alaska have identified high and low archaeological sensitivity zones. High sensitivity zones include:

- All land between mean lower low water and 100 feet elevation. The percent slope is not considered in the elevation distance.
- Former lode and placer mine locations.
- River valleys and lake and river systems that provide passes or portages across larger land masses.
- Lake and stream systems that contain or were known to contain anadromous fish.
- Elevated or fossil marine, river, and lake terrace systems.
- Areas associated with myths and legends.
- Potential raw material sources.
- Other areas identified through historical, ethnographic, or oral history research or sources.

All areas not described above are considered low sensitivity. Generally, the Hoonah road system falls into the low sensitivity zone for the occurrence of cultural resource sites. Numerous archaeological surveys have been conducted in the project area. Most of these surveys were associated with the timber sale program and involved shoreline surveys. In 1995, 94.11 miles of road were surveyed to monitor whether archaeological sites were impacted by road construction, and to test the assumption that these areas had a low probability for heritage resources. The roads surveyed were:

Freshwater Bay:	8508, 8510, 8512, 8513, 8514, and 8516,
Gypsum Creek:	8530,
Suntaheen Creek:	8533,
Iyouktug Creek:	8535.

No cultural sites were identified. Shell was found in cutbanks at five locations along Gypsum Creek road (8530), and along Wukuklook (8538) and Seal Creek roads (8610) indicating raised beach deposits. Radiocarbon dating indicated the shell samples were between 10,400 and 13,090 years old. Raised beaches may indicate the presence of older archaeological sites.

The Wukuklook road would be closed under all the alternatives. The Seal Creek road and last two miles of Gypsum Creek road are currently open to ATV use but would be closed in all alternatives except Alternative 1. Since the use on these roads is low and



would not increase under the alternatives, few negative impacts to the raised beach deposits would be expected.

There are no known cultural sites along the road system and no cultural sites were identified on those roads with direct access to beaches. An occasional culturally modified tree may be identified or a more recent use of the road system may create a modern cultural site. However, no historic properties have been identified along the road system in this analysis area. The alternatives in this analysis would not have a negative impact on cultural sites. Since roads access none of the known cultural sites in the project area, management of the road system would not affect the management and monitoring of these sites.

## Karst and Cave Resources

Roads can alter the karst groundwater hydrology by diverting surface flows away from or into karst systems. Cut-bank erosion and sediment from road surfaces can be introduced directly into the karst groundwater systems. Road fill and side cast can fill or plug karst features. Often karst features are flooded because of beaver activities associated with the plugging of culverts. No significant effects are anticipated from this project since most of the roads are located downslope of the groundwater outlet from the karst system. Thus, the roads could not intercept water entering the karst system or contribute either sediment or additional water into the system.

Alternative 3 closes the most roads across karst terrain and Alternative 1 closes the least (Table 4-9). The amount of open and closed road in Alternatives 2 and 4 are the same.

Table 4-9: Maintenance Level and Miles of Road across Karst Terrain in the Project Area

Maintenance Level	Miles of Road across Karst Terrain			
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
1 (closed)	16	20	24	20
2 (HCV)*	7	1	0	1
3 (passenger)	15	17	14	17

\*HCV: High Clearance Vehicle – includes all vehicles with ground clearance greater than 5 inches  
6.5 miles of road are constructed across carbonate bedrock on private lands in all alternatives.

For those roads that could affect karst terrain, road maintenance and/or closure protocols would minimize potential effects. Any interrupted surface drainage systems to karst groundwater systems would be re-established during road closure activities. Conversely, surface flows would not be diverted into karst groundwater systems. Sediment traps, revegetation of cut and fill slope, and other methods would be used to reduce erosion and sediment transport from the road surface into the karst system.



# 4 Environmental Consequences

## Subsistence

The following analysis and discussion is based on detailed subsistence information contained in the Forest Plan FEIS (pp. 3-565 to 3-569; Appendix H-18 and H-19). Additional information was gathered during scoping for this project.

Section 810 of ANILCA requires the Forest Service to evaluate the potential effects of proposed land use activities on subsistence uses and needs. An ANILCA 810 analysis must include several components. The proposed actions must be analyzed to determine if they significantly restrict subsistence uses. This analysis must be concluded with a draft determination either of “no significant effect” or a determination that clearly describes possible effects. For any conclusion other than “no significant effect,” formal ANILCA hearings must be conducted. Following these hearings, a final determination based on an analysis of the potential effects of the final proposed action must be published.

The Alaska Land Use council defined “significant restriction of subsistence use” as a substantial reduction in the opportunity to continue subsistence uses of renewable resources expected to result from a proposed action and alternatives to the proposed action. Abundance and distribution of resources, access, and competition (with non-rural residents) need to be considered in the analysis. The U.S. District Court further clarified the definition in its Decision of Record (*Kunaknana v. Watt*). It states in part, “restrictions for subsistence use would be significant if there were large reductions in abundance or major redistribution of these resources, substantial interference with harvestable access to active subsistence use sites or major increases in non-rural resident hunting.”

### ANILCA Section 810

This evaluation determines whether subsistence uses within the analysis area or portions of the area may be significantly restricted by any of the alternatives. Evaluation criteria used to assess the effects of the alternatives are: 1) changes in abundance or distribution of subsistence resources; 2) supply and demand; 3) changes in access to subsistence resources; and 4) changes in competition from non-subsistence users for those resources.

### EA Findings

The Forest Service makes distinct findings by alternative and resource category on whether there is a significant possibility of the significant restriction of subsistence use. These findings are based on information in the Forest Plan EIS (1997) and comments from the public. The resource categories evaluated are wildlife, fish, and plants.

**Wildlife:** Populations of deer, brown bear, furbearers and small game range throughout the project area. About 23 percent of the edible pounds of subsistence resources harvested by Hoonah households is deer meat.

**Fish:** The harvest of salmon provides 26 percent of the meat supply of Hoonah residents and other finfish provide 19 percent of the meat supply.

**Plants:** The residents supplement their diets by harvesting berries, seaweed, and other edible plants. Other plants are harvested for use in cultural or handicraft projects. Firewood is an important source of heat for Hoonah residents.

## Abundance and Distribution

**Potential Effects on Abundance and Distribution:** No habitat alteration is planned in this project. Closing roads decreases disturbance and creates refuge areas that would increase the abundance and maintain the distribution of wildlife populations. Removing culverts or structures that impede fish passage or have a high risk of negative effects on fish habitat would improve the abundance and distribution of salmon and other resident fish. Road management would not affect the abundance and distribution of the various plants used for subsistence purposes.

No negative effects on the abundance and distribution of wildlife, fish, or plants are anticipated from this project.

## Access

ANILCA states "...the Secretary shall permit on the public lands appropriate use for subsistence purposes of snowmobiles, motorboats, and other means of surface transportation traditionally employed for such purposes by local residents, subject to reasonable regulation." Access using motorboats and snowmobiles is not changed in this project. Access using passenger cars and ATV's would change under the alternatives. State and Federal regulations prohibit the use of motorized land vehicles to hunt brown bear and trap marten, mink, or weasel in the project area. Traditionally, subsistence hunting occurs predominantly along the coast but has increased adjacent to roads following their construction (TLMP EIS, 1997; page H-18). A detailed analysis of the effects of changing access on subsistence is presented earlier in this chapter under Issue 4. Alternative 3 closes the most road mileage, approximately 51 percent. Most of the closures are in Old-Growth Habitat. Alternative 4 would close 32 percent of the road mileage, the least amount of all the alternatives. Although access by passenger vehicles would be impeded, access by foot and in some cases, ATV's, would be maintained. The arterial and many collector roads would remain open to passenger vehicle access.

**Potential Impacts on Access:** None of the alternatives will significantly restrict subsistence access in the project area.

## Competition

This project does not influence changes in transportation systems that would bring non-rural hunters to the project area. The arterial road system and many of the collector roads in the project area would remain open to passenger vehicles in all the alternatives. Most of the hunting use occurs along the coast and arterial roads (TLMP, 1987; page H-18). The extensive road system maintains the opportunity for subsistence users to disperse across the project area. Closing some areas to motorized access would have little effect on competition with non-rural users for subsistence resources. Non-rural hunters are less likely to use ATV's or boats to access areas along closed roads than are local rural residents.

**Potential Impacts on Competition:** None of the alternatives will increase competition for subsistence resources.

## Displacement of Subsistence Users

**Wildlife:** Closing roads would enhance wildlife resources because disturbance from motorized vehicles and associated hunting pressure would decrease.

**Fish:** Salmon and other resident fish habitat would improve by the removal of impediments to fish passage and stream structures that reduce habitat if not properly maintained.

**Plants:** Protection of plant resources would increase with more road closures. The introduction of non-native plants along roads would decrease and the increased difficulty of access would limit the amount of plant material gathered.



## 4 Environmental Consequences

**Access:** Historical access to subsistence resources is generally along the coast and arterial road systems. These access venues would not change. Types of access would shift on some local roads from motorized to non-motorized but the subsistence activities would continue.

**Competition:** Competition between non-rural hunters and local subsistence hunters would decrease by closing some areas to motorized access. Non-rural hunters are less likely to use ATV's or boats to access areas along closed roads than are local rural residents. Wildlife habitat would improve in areas closed to motorized access, which would allow harvest levels to remain constant or increase.

No significant displacement of traditional and customary subsistence use is anticipated. However, displacement of users could occur because of social factors rather than availability of subsistence resources.

### **ANILCA 810 Finding**

The present and potential foreseeable cumulative effects from the action alternatives in this project do not present a significant possibility of a significant restriction of subsistence use for users of wildlife, fish, or plants.

## **Wetlands**

Wetlands provide habitat for fish, birds, and fur-bearing animals. They filter and store sediment and water, which reduces peak flows, maintains stream flows through low rainfall periods, and maintains water quality. Roads can alter the hydrologic connectivity of wetlands and streams, particularly in rich fen wetlands. When hydrologic connectivity is not maintained, small fish rearing streams may be disconnected from the wetlands that maintain them and dry up. The Hoonah road system avoids estuarine and riverine wetlands. Roads do cross palustrine wetlands, though. A palustrine wetland is generally referred to as a marsh, swamp, bog, fen, or prairie. The palustrine wetlands affected by roads on the project area are typified by emergent, scrub-shrub or moss-lichen vegetation that is seasonally or semi-permanently flooded. These wetlands are labeled PEM1B, PEM1C, PEM1/SS4B, PEM/ML1B, PSS1B, and PSS1C under the National Wetlands Inventory (project file).

Fens, especially calcareous fens as in the Game Creek drainage, are relatively rare wetlands on the Tongass National Forest. Fens are an important nutrient source to streams in the watershed. They continuously transport nutrients and oxygenated groundwater, and maintain higher levels of primary productivity than bogs. Fens also typically contain numerous small channels that provide rearing habitat for anadromous and resident fish (USDA, 1994).

There would be little difference in the road mileage crossing sensitive wetlands between alternatives (Table 4-9). Roads associated with these wetlands tend to be arterials with the exception of road 8504 in Game Creek. Road 8504 crosses two rich fen wetlands and would be closed under Alternatives 1 and 3. The crossing structures in the wetlands would remain in place under Alternative 1 but would be removed under Alternative 3. Removing the structures from this road and breeching the road prism would improve wetland function of this important salmon-rearing habitat. The function of the fen wetland would be enhanced even more with the replacement of culverts that impede fish passage.



## Environmental Consequences 4

Four segments of road 8508 and one segment of road 8509 cross fens and have a combined length of 1.8 miles within the fens. One of these road segments is periodically flooded because of beaver activities. Since this is a main transportation route, closure and reclamation of this section of road are not planned under any alternative.

Segments of roads 8510 and 8512, associated with Kennel and Pavlof creeks, cross sensitive wetlands at an elevation of approximately 500 feet. Hydrologic connectivity would be assessed, monitored, and improved where needed to ensure wetland function is maintained.

Table 4-9: Maintenance Level and Miles of Road across Sensitive Wetlands in the Project Area

Maintenance Level	Miles of Road			
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
1 (closed)	2.5	2.8	3.9	2.3
2 (HCV)*	0.8	1.3	0.5	1.0
3 (passenger)	6.4	5.6	5.3	6.4

\*HCV: High Clearance Vehicle – includes all vehicles with ground clearance greater than 5 inches

### Threatened, Endangered, and Sensitive Species

No species listed as threatened or endangered exist in the project area (project file). The Stellar sea lion and humpback whale occur in the saltwater of the perimeter of Chichagof Island. The removal of stream crossing structures would not affect the marine environment. Sensitive species that may be affected by this project include the northern goshawk, and trumpeter swan. No goshawk nests are known to occur within 600 feet of the roads. Roadwork associated with this project would not affect goshawk habitat. The trumpeter swan winter and feed in the estuarine wetlands and no roads transect this environment. Other sensitive species designated by the Regional Forester do not occur in the project area.

# 4 Environmental Consequences

# Chapter 5

## Lists

### Interdisciplinary Team

Greg Killinger	Position: Supervisory Biologist, Sitka Ranger District Experience: 17 years with the USDA Forest Service Education: B.S., Wildlife Biology; M.S., Fish and Wildlife
Don Youkey	Position: Zone Biologist, Tongass National Forest Experience: 10 years with the USDA Forest Service Education: B.S., Wildlife Ecology; M.S., Wildlife Science
Dan Kelliher	Position: Hydrologist, Tongass National Forest Experience: 22 years with the USDA Forest Service Education: B.S. Hydrology
Karen Iwamoto	Position: Archaeologist, Tongass National Forest Experience: 18 years with the USDA Forest Service Education: B.A., Anthropology; B.A., History
Brian Heinrichsen	Position: District Engineer, Hoonah Ranger District Experience: 28 years with the USDA Forest Service
Tim Hazlewood	Position: Staff Officer, Hoonah Ranger District Experience: 28 years with the USDA Forest Service
Sara Grove	Position: Land Management Planner Experience: 14 years with the USDA Forest Service Education: B.A., Biological Sciences; M.S., Forest Resources



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# **Appendix A**

**Road Management Objectives**

**Road Cards**

# Experiments in Psychology

by  
J. M. ALGER

Author of  
"The Psychology of the Individual"

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NEW YORK

1914

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NEW YORK



ROAD MANAGEMENT OBJECTIVE  
(FSH 7709.55, CH.30)

ROAD NUMBER: 85811 (PL.) ROAD NAME Chicken Entrance  
TERMINI: JCT 8580 to EOP LENGTH: 4.4  
DISTRICT HRD FUNCTION CLASS: ARTERIAL COLLECTOR X LOCAL

## LONG RANGE PLANNING CRITERIA:

CYCLE OF ENTRY: 1990/91 First Entry  
HARVEST DATE(S)/VOLUMES: (1981-90 5615) 5448 MBF

## MANAGEMENT AREA DIRECTION

MGT AREA C27

LUD III THIS MANAGEMENT AREA IS INCLUDED IN THE ACTIVE LOGGING AREA FOR THE LONG TERM SALE WITH ALASKA PULP CORPORATION (APC). VCU'S 192 AND 193 ARE IN THE APC 86-90 STUDY AREA. SPECIAL PRESCRIPTIONS WILL BE WRITTEN TO PROTECT THE FISH STREAMS, OTTER LAKE, AND MUD FLAT AREA. IT WOULD BE POSSIBLE TO ACCESS THE FLATS FROM THE EXISTING NEKA ROAD SYSTEM AND TO CONSTRUCT A PUBLIC RECREATION CABIN WHICH COULD BE USED FOR BIRD VIEWING AND HUNTING. FISHERIES HABITAT ENHANCEMENT WILL TAKE PLACE IN MUD RIVER. MAJOR ACTIVITY EMPHASIS WILL BE DIRECTED TOWARD TIMBER HARVEST, RELATED ACCESS ROAD CONSTRUCTION, AND FISHERIES ENHANCEMENT.

TAMP 85-86  
P. 57

## ACCESS MANAGEMENT OBJECTIVES

Provide access for timber sale prep, harvest, reforestation, and multi-resource administration. Open to public traffic, for dispersed rec activities. Future objective: possible timber access in Chicken Creek drainage.

## DESIGN CRITERIA

## TRAFFIC REQUIREMENTS: (USERS/VOLUMES/MIX)

COMMERCIAL: off-highway log truck, yarder, lowboy

RECREATION & OTHER PUBLIC USE: low clearance vehicle

ADMINISTRATION: Pickup

SAFETY: Mixed Traffic

## VEHICLE CHARACTERISTICS:

DESIGN VEHICLE: Lowboy, off-highway Log Truck

CRITICAL VEHICLE: Yarder

TRAFFIC SERVICE LEVEL: C SERVICE LIFE/LEVEL: Long term Intermittent

ROAD CHARACTERISTICS: WIDTH 14' R.MIN. 75' SURFACE IMP DRAINAGE Ditch + culvert

ENVIRONMENTAL & RESOURCE CONSIDERATIONS: (Soil & Water, Fish & Wildlife, Visuals, Recreation, Archeology, Silviculture) SOILS: Road is located on high risk soils in unit 52 + area of compact glacial till west of 52. REC, VISUALS: minimize impact from key viewpoint (Otter Lake). Silviculture: Vehicular access needed for 5 years after harvest.

ECONOMICS:

OTHER: (LTF/type, Sort Yard, Float/Ramp, Volume Rate, Use Period)

85811

OPERATION & MAINTENANCE CRITERIA

## A. DURING COMMERCIAL USE:

SUBJECT TO HIGHWAY SAFETY ACT: YES ☒ NO ☐JURISDICTION: Forest ServiceTRAFFIC MANAGEMENT STRATEGY: Accept low clearance vehicle  
TrafficTRAFFIC CONTROL DEVICES: (Gates/Signs/Barricades) Warning  
Signs posted by purchaser during log haulMAINTENANCE LEVEL: 3MAINTENANCE RESPONSIBILITY: Forest Service

ACTUAL TRAFFIC VOLUMES: \_\_\_\_\_

## B. BETWEEN COMMERCIAL USE:

SUBJECT TO HIGHWAY SAFETY ACT: YES ☒ NO ☐JURISDICTION: Forest ServiceTRAFFIC MANAGEMENT STRATEGY: Encourage low clearance  
vehicle Traffic

TRAFFIC CONTROL DEVICES: (Gates/Signs/Barricades) \_\_\_\_\_

MAINTENANCE LEVEL: 3MAINTENANCE RESPONSIBILITY: Forest Service

ACTUAL TRAFFIC VOLUMES: \_\_\_\_\_

PREPARED BY: Kathy J Peterson DATE: April 30, 1991REVIEWED BY: Bill Hiles DATE: 9/13/91 Schumaker DATE: 9-13-91  
TRANSPORTATION CONSTRUCTIONScott Hering DATE: 9/13/91  
OPERATIONSREVIEWED BY: William Fiehn DATE: 9/17/91  
FOREST ENGINEERAPPROVED BY: Joseph A. Sheault DATE: 9/30/91  
DISTRICT RANGER



# Road Card Eight Fathom EIS

Road Number: 8581 (Section 1)

## Photo Information

Year: 1986  
Flight Line: 20A, 17, 18A  
Photo Number: 151, 167, 8

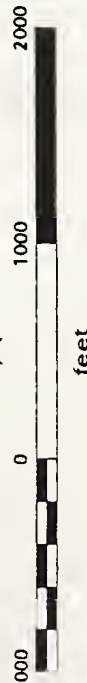
## Legend

- VCU Boundary
- Harvest Unit Boundary
- Road Card Segment
- Other Proposed Roads
- Existing Roads
- Contour Interval (100 feet)
- Landing
- Shoreline and Lakes
- Class I and II Stream Buffers
- Class III Stream
- Eagle Tree

## IDT Review

Reviewed by: /s/ E. Johnson  
Date: 9/29/93

N





**Eight Fathom Project  
Road Card**

**VCU: 1930, 1931, 1940**

**Road: 8581-1**

Silviculture	By: M. White	Date: 7-22-93
No Concerns.		
Logging Systems	By: A. Stiffert	Date: 7-8-93
Yarding of adjacent units will require rigging across road, necessitating traffic control.		
Transportation Systems	By: A. Stiffert	Date: 7-8-93
Road grade generally less than 6%, maximum 10%. End-haul construction for 650'. Over half of distance is on moderate sloping muskeg. Follow BMP guidelines for excavation, material placement, and instream operations for the two major anadromous fish stream crossings.		
Vegetation/Wetlands	By: D. Every	Date: 7-21-93
No concerns as long as adequate cross drainage maintained.		
Soils	By: R. Langendoen	Date: 7-24-93
Minimize disturbance through muskegs. Fill placement on soft soils may require use of filter fabric.		
Fisheries	By: G. White	Date: 7-22-93
Six Class II crossings. Minimize Class II channel disturbance. Follow guidelines for excavation and material placement. Minimize sediment into Class II and Class III streams. Follow guidelines for culvert sizing on streams. Utilize shot rock as fill for culverts and arch pipes as needed, not soil fill. Provide for fish passage on Class II crossings.		
Hydrology	By: D. Bjerklie	Date: 7-23-93
Design crossing for 50 yr. flood on stream 10660 and 10600. Minimized disturbance in muskeg providing for additional cross-drainage as needed in muskeg.		
Wildlife	By: V. Artman	Date: 7-23-93
No concerns for bear or marten.		
Visual	By: L. Howell	Date:
Most of road unseen. Other portions located in middle ground areas are screened by vegetation and low topography.		
Recreation	By: G. Pool	Date: 7-22-93
No effects.		
Cultural	By: D. Pittenger	Date: 7-24-93
Outside high sensitivity area, no cultural resources survey required.		
IDT Summary	By: E. Johnson D. Every	Date: 7-26-93 6-6-95
New location provides better access and stream crossing locations. Follow above BMPs for Class II stream crossings (BMPs R4A, R1A, S4A, S1A, S1B, S1C, S2A).		

# **Appendix B**

**Alternative Maintenance Levels**

**For all Roads on the**

**Hoonah Ranger District**





## Road Maintenance Levels by Alternative on the Hoonah Ranger District.

Road Number	Existing Condition	Alternative			
		1	2	3	4
Game Creek					
8502	ML2 <sup>1</sup>	ML1	ML3	ML2	ML3
8504	ML2; 1mi ML1	ML1	ML3; 2.5mi ML1	ML1	ML3; 2.5mi ML1
8576	ML3	ML1	ML3	ML1	ML3
85761	ML2	ML1	ML3; 1mi ML1	ML1	ML3; 1mi ML1
85765	ML2	ML1	ML2	ML1	ML2
Salt Lake Bay/Portage					
8578	ML2	ML3	ML3	ML2	ML2
8579	ML3	ML3	ML1	ML1	ML3; 2.3mi ML1
85792	ML1	ML1	ML1	ML1	ML1
85793	ML2	ML2	ML1	ML1	ML1
85794	ML2	ML2	ML1	ML1	ML2; 1mi ML1
Neka Cr. – 8-Fathom					
8580	ML3	ML3	ML3	ML3	ML3
8541	ML1	ML1	ML1	ML1	ML1
8544	ML3	ML3	ML2	ML2	ML2
8546	ML1	ML1	ML1	ML1	ML1
8582	ML2	ML3	ML2	ML2	ML2
85811	ML2	ML3	ML2	ML1	ML2
8577	ML3	ML3; 0.5mi ML1	ML3; 0.5mi ML1	ML3; 0.5mi ML1	ML3; 0.5mi ML1
85771	ML1	ML1	ML1	ML1	ML1
85772	ML1	ML1	ML1	ML1	ML1
Bayhead					
8509	ML3	ML3	ML3	ML3	ML3
85091	ML1	ML1, Forest Order	ML1	ML1	ML1
85092	ML2	ML1, Forest Order	ML1	ML1	ML2
85093	ML2	ML3	ML2	ML2	ML2
Seal Creek					
8610	ML2	ML2	ML1	ML1	ML1
86101	ML2	ML1	ML1	ML1	ML1
Gypsum Creek					
8530	ML2	ML2	ML3; 1.2mi ML1	ML3; 1.2mi ML1	ML3; 1.2mi ML1
85290	ML1	ML1, Forest Order	ML1	ML1	ML1
Wukuklook Creek					
8538	ML1	ML1, Forest Order	ML1	ML1	ML1
85381	ML1	ML1, Forest Order	ML1	ML1	ML1
Iyouktug Creek					
8534	ML2	ML3, closure <sup>2</sup>	ML2; 3mi ML1	ML2; 3mi ML1	ML2; 3mi ML1
85341	ML2	ML3, closure <sup>2</sup>	ML2	ML2	ML2
8535	ML3	ML3	ML3	ML3	ML3

# B Appendix

Road Number	Existing Condition	Alternative			
		1	2	3	4
Suntaheen Creek					
8533	ML1	ML1, Forest Order	ML3	ML1	ML3
85331	ML1	ML1, Forest Order	ML1	ML1	ML1
85307	ML1	ML1	ML1	ML1	ML1
85312	ML1	ML1	ML1	ML1	ML2
85313	ML1	ML1	ML1	ML1	ML1
Freshwater Bay					
8508	ML2	ML2	ML2	ML2	ML2
85082	ML2	ML1	ML2	ML2	ML2
8510	ML3; 0.8mi ML1	ML3; 0.8mi ML1	ML3; 0.8mi ML1	ML3; 0.8mi ML1	ML3; 0.8mi ML1
8511	ML1	ML1	ML1	ML1	ML1
8512	ML3; 1.2mi ML1	ML3	ML3; 1.2mi ML1	ML3; 1.2mi ML1	ML3; 1.2mi ML1
8513	ML3	ML3	ML3; 1.5mi ML1	ML3; 1.5mi ML1	ML3
85131	ML1	ML1	ML1	ML1	ML1
85132	ML2	ML1	ML1	ML1	ML1
8514	ML2	ML1	ML2	ML2	ML2
8515	ML2	ML1	ML2	ML1	ML2
85151	ML1	ML1	ML1	ML1	ML1
8516	ML1	ML1	ML2	ML2	ML2
8517	ML2	ML1	ML2, 0.5mi ML1	ML2, 0.5mi ML1	ML2, 0.5mi ML1
85171	ML2	ML1	ML2, 0.5mi ML1	ML2, 0.5mi ML1	ML2, 0.5mi ML1
8518	ML2	ML3	ML2, 1mi ML1	ML1	ML2, 1mi ML1
85181	ML1	ML1	ML1	ML1	ML1
8519	ML3	ML3	ML3	ML3	ML3
85191	ML2	ML1	ML3; 1mi ML1	ML3; 1mi ML1	ML3; 1mi ML1
85192	ML2	ML1	ML1	ML1	ML1

<sup>1</sup>ML: Maintenance Level – ML1 closed for more than a year

ML2 open for high-clearance vehicles

ML3 open for passenger vehicles, surface not smooth.

<sup>2</sup> seasonal closure from August 1 through April 1.



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